MATHEMATICA Inc.

The employee owned parent company of Mathematica Policy Research, Inc. and the Center for Studying Health System Change

P.O. Box 2383 ■ Princeton, NJ 08543-2393 ■ Tel: 609-799-3535 ■ Fax: 609-799-0005

SUMMARY: PAY-FOR-PERFORMANCE

Definition. Pay-for-performance ("P4P") is a term that describes health-care payment systems that offer financial rewards to providers who achieve, improve, or exceed their performance on specified quality, cost, and other benchmarks. Most approaches adjust aggregate payments to physicians and hospitals on the basis of performance on a number of different measures. Payments may be made at the individual, group, or institutional level. Performance may be measured using benchmarks or relative comparisons. Generally, there are three types of performance measures: structure, process, and outcome.

Intended Effects. P4P programs are intended to increase the provision of quality care and decrease health care costs over the long term.

Incentives for Providers. Financial rewards (or penalties) for meeting or failing to meet predetermined quality measures are expected to lead to improved quality of care. These improvements may include increased provision of recommended services, upgrades to practice infrastructure, and/or improvements in health outcomes.

Potential Problems. Currently, there tends to be a narrow clinical focus among P4P programs, which can lead providers to focus aspects of care that are captured by quality measures while paying less attention to those that are not. In addition, P4P payments may represent too small a fraction of provider reimbursement to have a significant effect on behavior.

Experience with Implementation. Prevalence is high and increasing, though programs are widespread and disparate.

Evidence. Modest evidence shows the potential of P4P programs to improve quality and facilitate cost savings; some evidence suggests possible unintended or negative effects. Lack of rigorous evaluations coupled with lack of coordination across programs makes establishing causality difficult.

PAY-FOR-PERFORMANCE

1. What is it?

Spurred by studies showing significant problems with quality of care in the United States over the past decade (McGlynn et al. 2003; Institute of Medicine 2001), numerous "pay-for-performance" (P4P) programs have been launched by health plans and other payers (Christianson, Leatherman, and Sutherland 2008; Rosenthal et al. 2007; Petersen et al. 2006; Rosenthal et al. 2006; to view various Medicare quality initiatives, see http://www.cms.hhs.gov/QualityInitiativesGenInfo/; to view a report documenting P4P programs in state Medicaid programs through mid-2006, see http://www.commonwealthfund.org/publications/publications_show.htm?doc_id=472891).

How are P4P payments structured? In essence, most P4P approaches adjust aggregate payments to physicians and hospitals on the basis of performance in three main ways. Payments can be adjusted based on: (1) providers' performance on agreed-upon measures relative to the performance of other providers in a market, (2) absolute performance based on attainment of predetermined targets, and/or (3) improvement in quality over time, compared to relative or absolute quality improvement benchmarks. Based on performance on selected quality measures (and the cost of care, in some cases), there are number of ways by which payers may disburse performance payments.[1] Performance payments may be made to hospitals, networks of physicians, medical group practices, or individual physicians. Payments may be made as a percentage of total provider fees for relevant care, or payments may be made on a "per member" basis (per month or annually) for those patients whose care determines provider performance on selected measures. Payments may also be made to provider entities as a percentage of cost savings achieved relative to a benchmark. For instance, patients admitted for heart attack to one hospital may have been re-admitted to the hospital at a slower rate compared to re-admission rates for similar groups of heart attack patients admitted to other hospitals.

What measures are used? Health care quality measures generally fall under three categories: structure, process, and outcome measures. Structural measures are used to track and pay for resources that help improve care delivery (e.g., personnel such as diabetes educators or nutritionists and infrastructure such as electronic medical record systems). Process measures include clinical services demonstrated to be necessary to facilitate positive health outcomes, such as testing hemoglobin A1c levels in patients with diabetes or prescribing aspirin to heart attack patients upon admission to a hospital (most payers track process measures found within the Health Plan Employer Data and Information Set, or "HEDIS"). Outcome measures typically include clinical outcomes such as whether blood pressure of diabetic or hypertensive patients is under control or whether hospital patients are re-admitted to the hospital for potentially avoidable conditions.[2]

Though not a quality measure, per se, cost efficiency comprises another domain analyzed by payers measuring provider performance. Some payers have implemented programs whereby payers receive bonus payments if they meet specific performance criteria as well as deliver care in a cost efficient way (usually relative to costs associated with care delivered by other providers in a market to patients with certain conditions).

Individual payer versus all-payer approaches. For the most part, these programs have been undertaken by individual payers in a market, although some programs, such as efforts led by the Pacific Business Group on Health and the Integrated Health Association in California, have attempted to coordinate measurement and/or payment approaches across multiple payers.

---

[1] In some cases payers may penalize providers for poor performance compared to peers or for not meeting goals.

[2] Some P4P programs also track outcome measures such as patient satisfaction with care.

2. Intended effects

P4P programs are intended to increase the provision of quality care, which theoretically will have the effect of decreasing health care costs over the long term due to patients remaining healthy for longer periods of time. Most P4P programs are aimed at patients with conditions that cost payers the most (e.g., chronic conditions such as diabetes, asthma, coronary artery disease, and congestive heart failure, and acute conditions such as heart attack and hip and knee replacements). It is believed that having in place certain infrastructure items (e.g., electronic medical records or computerized physician order entry systems) and practicing medicine based on evidence-based guidelines will produce positive health outcomes for patients with conditions associated with costly care. Further, some payers introduce P4P programs to encourage providers to provide coordinated and efficient care to sicker and more complex patients (such as patients requiring care from a number of different providers).

3. Incentives to providers

P4P approaches are designed to provide incentives for quality improvement. P4P programs use financial incentives to encourage providers to perform well on measures representing recommended services and practice modifications (e.g., implementing electronic medical records) believed to improve care. P4P programs that measure provider performance using outcome measures may pose greater financial risk to providers than programs measuring performance only on structure or process measures because providers view some outcomes as more dependent on patient rather than provider behavior.

4. Potential problems or drawbacks

There are a number of potential limitations or problems associated with P4P programs.

Narrow clinical focus. The lack of coordination across P4P programs and measures and the often narrow scope of measures within programs lead some to believe that current P4P programs do not encourage care coordination and communication between various provider types (Tynan and Draper 2008). Most P4P programs include a narrow set of quality measures aimed at limited numbers of services and patient groups. There are also concerns that providers will devote more attention to patients with conditions pertaining to quality measures than to other patients (i.e., "manage to the metric"), thus resulting in declines in quality of care not measured (Christianson, Leatherman, and Sutherland 2008; Rosenthal and Frank 2005).

Most P4P programs do not address incentives in underlying payment systems. Most P4P programs introduce provider payment mechanisms that are supplementary to fee-for-service and capitation payment systems. Because of this, incentives around volume and efficiency of care delivery services associated with fee-for-service and capitation payment mechanisms may not be addressed by many P4P programs as they now exist. Further, while payers have increased funds available through P4P programs, these funds still represent small percentages of provider reimbursement (Rosenthal et al. 2007).

Attribution, Risk Selection, and "Cherry Picking." When P4P programs include health outcome performance measures, concerns arise about whether providers or patients may be most responsible for particular outcomes. It may also be challenging to determine which outcomes should be attributed to which providers in making P4P payments. In addition, outcomes-based P4P programs may lead to concerns about financial penalties for providers who tend to treat sicker patients, or conversely, the introduction of incentives for providers to "cherry pick" the healthiest patients. Risk selection issues may be addressed by risk adjustment methods; however, most provider-level risk adjustment methods are in their early stages of development.

Potentially limited effects when implemented by individual payers. Given the differences in measures used and how financial incentives are structured among various P4P programs, individual programs may have limited effects. Further, while payers have increased funds available through P4P programs, these funds typically represent small percentages of provider reimbursement (Rosenthal et al. 2007), limiting the strength of P4P financial incentives faced by individual providers.

Small numbers and measure precision. Because measures are often focus on selected clinical conditions, the data for a particular provider may be based on a relatively small number of patients, leading to potentially imprecise or unstable estimates, particularly when the program is implemented by a single payer. These issues may be addressed by developing composite measures across clinical conditions, expanding the measurement time window, and/or developing multi-payer P4P programs.

5. Experience with implementation

P4P programs are quite prevalent among both private and public payers. A 2006 survey of commercial HMOs by Rosenthal and colleagues found such programs to be more prevalent in the eastern and western portions of the country (Rosenthal et al. 2006). Rosenthal also led two analyses in 2004 and 2007 of 27 P4P programs administered by major health plans (and a few payer/purchaser coalitions). While the majority of these P4P programs initially focused more on structure and process measures than outcome measures, payers are increasingly measuring outcomes and cost efficiency, as well (Rosenthal et al. 2004; Rosenthal et al. 2007). The majority of P4P programs have been directed at physicians, though there a number of programs that track hospital performance, as well.

The Medicare program and state Medicaid programs have been experimenting with P4P programs. One report found that as of mid-2006 more than half of states were operating one or more P4P programs and 85 percent expected to do so within the next five years (Kuhmerker and Hartman 2007). The majority of state Medicaid P4P programs operate in managed care or primary care case management environments, and rewarding the provision of primary care continues to be a component of most Medicaid P4P programs.

Medicare Initiatives. There are a number of Medicare demonstrations that can in one way or another be classified as P4P initiatives. Listed below are several Medicare programs that in some way reflect P4P approaches described above (i.e., these programs in some way pay providers for performance on process or outcome measures or provide payments and incentives to encourage providers to modify practice infrastructure to facilitate care improvement, e.g., implement electronic medical records):

- **Premier Hospital Quality Incentive Demonstration.** This demonstration focused on improving the quality of inpatient care. The Centers for Medicare and Medicaid Services (CMS) collected data on 34 quality measures relating to five clinical conditions. Hospitals that scored in the top 10% for a given set of quality measures were to receive a 2% bonus payment on top of the standard diagnosis-related group (DRG) payment for the relevant discharges. Those that scored in the next highest 10% were to receive a 1% bonus. In the third year (2008) of the demonstration, those hospitals that did not meet a predetermined threshold on quality measures were subject to reductions in payment.

- **Physician Group Practice Demonstration.** This was first Medicare P4P initiative for physicians. The demonstration rewarded physicians for improving the quality and efficiency of health care services by encouraging coordination between Part A (hospital) and Part B (physician ambulatory) services and by promoting investment in administrative structure and process. This demonstration also rewarded physicians for improving health outcomes. Ten large (200+ physicians) were to participate, and performance-based payments were made if practices achieved savings in comparison to a control group.

- **Medicare Care Management Performance Demonstration.** This demonstration promotes the adoption of and use of health information technology and makes payments to physicians who meet or exceed performance standards (structure, process, and outcome measures). This demonstration focused on small and medium-sized physician practices in four states.

Medicare has also sponsored related programs, including pay-for-reporting efforts to be used in public reporting of performance measures to consumers and other financial incentive programs that have a performance measurement component, such as disease management and care coordination programs.

Massachusetts. In Massachusetts, there are a number of ongoing programs that resemble P4P programs in one way or another. In 2001, Partners Community HealthCare, Inc. and local health plans began a migration from capitation or budget-based risk toward P4P contracts. In general, these contracts included some element of withhold, often approximately 10 percent of hospital and/or physician fees. Some included an opportunity for bonus payments beyond the agreed-upon fee schedule. PCHI's rewards are earned or forfeited at a network level and not at the level of the individual practitioner. (Levin-Scherz et al. 2006). Blue Cross Blue Shield of Massachusetts has P4P programs for primary care physicians, multispecialty group practices, and hospitals. In addition, the alternative quality contract offered in 2009 by BCBSMA enables physicians and hospitals to earn significant performance payments for quality, as well as enabling providers to have responsibility and flexibility to manage all medical expenditures for their patients.

A coalition of payers and purchasers in Massachusetts is participating in the Bridges to Excellence program (Massachusetts is one of the original Bridges to Excellence pilot markets and has been active since 2004). Bridges to Excellence is a non-profit organization developed by a number of various health care stakeholders which has as its mission recognizing and rewarding health care providers providing quality care. (For more information on Bridges to Excellence, see http://bridgestoexcellence.org/.)

6. Evidence

To date there have been relatively few rigorous evaluations of the effects of P4P programs. In the health services research literature there are several informative reviews of P4P evaluations. While there is evidence of associations between P4P programs and improved care and health outcomes, evidence is not strong, and it has been difficult to establish causality between financial incentives of P4P programs and improved care and health outcomes.

Christianson and colleagues recently published a review of several P4P programs (Christianson, Leatherman, and Sutherland 2008). They reviewed programs aimed at both physicians and hospitals. Six of nine physician programs focused on diabetes care. Seven of the nine physician programs offered bonus payments of some type for achieving quality benchmarks while two physician programs returned a percentage of withheld funds. In only one physician program was improvement rewarded along with meeting benchmarks. Highlights of physician P4P program effects noted by Christianson are listed below:

- For every program, significant improvement on at least one quality measure was demonstrated (though the authors noted most studies used before-after designs with no comparison groups, and the authors also noted strong potential for "volunteer bias" in most evaluations).

- Three evaluations employed quasi-experimental designs (a stronger study design from which conclusions regarding associations may be more confidently made). In one evaluation, improvement on five of six diabetes process measures and two of three diabetes outcome measures was demonstrated.

- In reviewing a 2005 quasi-experimental study by Rosenthal and colleagues (Rosenthal et al. 2005), Christianson and colleagues noted that groups receiving performance payments performed better on only one of three process measures (cervical cancer screening; the other two measures were provision of mammography and hemoglobin A1c testing).

Christianson and colleagues also reviewed evaluations of three P4P programs aimed at hospitals. One study evaluated a program implemented in Australia that provided bonus payments to 21 public emergency departments. These emergency departments received payments at the beginning of the year and were required to return varying portions of the payments if the emergency departments did not achieve targets relating to ambulance bypass and patient waiting times. Another evaluation analyzed a program implemented by a health plan in Hawaii whereby 17 hospitals were eligible to receive performance payments based on structure, process, outcome, and patient satisfaction measures. The authors reviewed three evaluations of the Medicare Premier Hospital Quality Initiative discussed above. Listed below are effects of the hospital programs noted by Christianson and colleagues:

- Emergency departments in the Australian program were shown to have improved on two of three measures, with improvements sustained for three years.

- The program in Hawaii lasted four years and improvements in rates of risk-adjusted surgical complications and reduced lengths of stay for several surgical procedures were demonstrated. (Christianson and colleagues note there was no comparison group and a strong potential for volunteer bias).

- A strong evaluation of the Medicare Premier program found significant improvements of 2.6%-4.1% in composite performance over two years, attributable to the P4P incentives, though most of the bonus dollars went to hospitals with the highest performance at baseline. (This evaluation [Lindenauer et al. 2007] compared 207 hospitals that voluntarily agreed to participate in the initiative to other hospitals that chose not to participate).

Petersen and colleagues (Petersen et al. 2006) reviewed 17 articles analyzing mostly physician P4P programs. Two studies reported the effect of payment-system level financial incentives, and the remaining 15 evaluated financial incentives directed to provider groups or individual physicians. Listed below are effects of the programs noted by Petersen and colleagues:

- Of the nine studies that evaluated the use of financial incentives directed to provider groups, 7 found partial or positive effects of financial incentives on measures of quality, though Petersen and colleagues noted small effect sizes for some of these studies. In 2 studies the provider group-level incentive resulted in a statistically significant improvement in the measure of quality of care.

- In two randomized trials evaluating group-level incentives for preventive health services, the incentives had no effect when compared to the control group.

- Five of six studies found partial or positive effects of incentives directed at individual physicians.

- One study showed evidence of a negative effect on access to care for the sickest patients.

A recent study of P4P programs in Massachusetts examined data from the Massachusetts Health Quality Partners organization on the performance of over 5,000 Massachusetts physicians (Pearson et al. 2008). In particular, the researchers examined provider performance on thirteen HEDIS measures, comparing physicians practicing under P4P contracts to physicians who were not practicing under P4P contracts. The researchers found that from 2001 to 2003, performance on every HEDIS measure improved both among patients of groups with

new P4P incentives and among those receiving care in comparison groups (groups not having P4P contracts in place).

Conclusion. There are many P4P programs in place across the country, having been implemented by both private and public payers, though there are no "all-payer" programs in effect. Most programs are in early stages, and there is little coordination across programs, making it unlikely that P4P programs by themselves and in isolation of one another will have nationwide or even statewide effects on the quality and cost of health care. Contributing to this likelihood are the limited quality measure sets available across programs and the diverse ways by which P4P programs have been implemented (e.g., there are considerable variations by which P4P programs structure provider financial incentives). Further, P4P programs as currently structured do not address underlying incentives in existing payment systems. In short, while P4P approaches may be an important piece of payment reform efforts, by themselves and without addressing other issues they likely will only have marginal effects on cost and quality.

7. Readings

Gold, Marsha, and Suzanne Felt-Lisk. "Using Physician Payment Reform to Enhance Health System Performance." Washington, DC: Mathematica Policy Research, Inc., December 2008.

Rosenthal, Meredith B., Rushika Fernandopulle, HyunSook Ryu Song, and Bruce Landon. "Paying for Quality: Providers' Incentives for Quality Improvement." *Health Affairs*, vol. 23, no. 2, March/April 2004, pp. 127-141.

Rosenthal, Meredith B. "Beyond Pay for Performance – Emerging Models of Provider-Payment Reform." *New England Journal of Medicine*, vol. 359, no. 12, September 18, 2008, pp. 1197-1200.

8. References

Christianson, Jon B., Sheila Leatherman, and Kim Sutherland. "Lessons from Evaluations of Purchaser Pay-for-Performance: A Review of the Evidence." *Medical Care Research and Review*, vol. 65, no. 6 suppl, December 2008, pp. 5S-35S.

Institute of Medicine, Committee on Quality of Health Care in America. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press, 2001.

Kuhmerker, Kathryn and Thomas Hartman. "Pay-for-Performance in State Medicaid Programs: A Survey of State Medicaid Directors and Programs." New York, New York: The Commonwealth Fund, April 2007.

Levin-Scherz, Jeffrey, Nicole DeVita, and Justin Timbie. "Impact of Pay-for-Performance Contracts and Network Registry on Diabetes and Asthma HEDIS Measures in an Integrated Delivery Network." *Medical Care Research and Review*, vol. 63, no. 1, (Supplement to February 2006), pp. 14S-28S.

Lindenauer, Peter K., Denise Remus, Sheila Roman, Michael B. Rothberg, Evan M. Benjamin, Allen Ma, and Dale W. Bratzler. "Public Reporting and Pay for Performance in Hospital Quality Improvement." *New England Journal of Medicine*, vol. 356, no. 5, February 1, 2007, pp. 486-496.

McGlynn, Elizabeth A., Steven M. Asch, John Adams, Joan Keesey, Jennifer Hicks, Alison DeCristofaro, and Eve A. Kerr. "The Quality of Health Care Delivered to Adults in the United States." *New England Journal of Medicine*, vol. 348, no. 26, June 26, 2003, pp. 2635-2645.

Pearson, Steven D., Erick C. Schneider, Ken P. Kleinman, Kathryn L. Coltin, and Janice A. Singer. "The Impact of Pay-For-Performance on Health Care Quality in Massachusetts, 2001-2003." *Health Affairs*, vol. 27, no. 4, July/August 2008, pp. 1167-1176.

Petersen, Laura A., LeChauncy D. Woodard, Tracy Urech, Christina Daw, and Supicha Sookanan. "Does Pay-for-Performance Improve the Quality of Health Care?" *Annals of Internal Medicine*, vol. 145, no. 4, August 15, 2006, pp. 265-272.

Rosenthal, Meredith B., Rushika Fernandopulle, HyunSook Ryu Song, and Bruce Landon. "Paying for Quality: Providers' Incentives for Quality Improvement." *Health Affairs*, vol. 23, no. 2, March/April 2004, pp. 127-141.

Rosenthal, Meredith B., Richard G. Frank, Zhonghe Li, and Arnold M. Epstein. "Early Experience With Pay-for-Performance: From Concept to Practice." *Journal of the American Medical Association*, vol. 294, no. 14, October 12, 2005, pp. 1788-1793.

Rosenthal, Meredith B. and Richard Frank. "What is the Empirical Basis for Paying for Quality in Health Care?" *Medical Care Research and Review*, vol. 63, no. 2, April 2006, pp. 135-157.

Rosenthal, Meredith B., Bruce E. Landon, Sharon-Lise T. Normand, Richard G. Frank, and Arnold M. Epstein. "Pay for Performance in Commercial HMOs." *New England Journal of Medicine*, vol. 355, no. 18, November 2, 2006, pp. 1895-1902.

Rosenthal, Meredith B., Bruce E. Landon, Katherine Howitt, HyunSook Ryu Song, and Arnold M. Epstein. "Climbing Up the Pay-for-Performance Learning Curve: Where are the Early Adopters Now?" *Health Affairs*, vol. 26, no. 6, November/December 2007, pp. 1675-1682.

Tynan, Ann and Debra A. Draper. "Getting What We Pay For: Innovations Lacking in Provider Payment Reform for Chronic Disease Care." *Research Brief: Findings from the Center for Studying Health System Change*, No. 6, June 2008, pp. 1-8.

Paying For Quality: Providers' Incentives For Quality Improvement

An assessment of recent efforts to align providers' incentives with the quality improvement agenda.

by Meredith B. Rosenthal, Rushika Fernandopulle, HyunSook Ryu Song, and Bruce Landon

ABSTRACT: Paying health care providers to meet quality goals is an idea with widespread appeal, given the common perception that quality of care in the United States remains unacceptably low despite a decade of benchmarking and public reporting. There has been little critical analysis of the design of the current generation of quality incentive programs. In this paper we examine public reports of paying for quality over the past five years and assess each of the identified programs in terms of key design features, including the market share of payers, the structure of the reward system, the amount of revenue at stake, and the targeted domains of health care quality.

DELIVERING HIGH-QUALITY CARE in the current U.S. health care system does not always pay.[1] In the case of many aspects of clinical quality, the widespread use of fee-for-service payment fails to promote or even discourages optimal treatment. For example, an effective chronic care management program may lead to lower revenues for providers, since quality improvement activities are not billable and acute care visits are reduced as a result. Increasingly, however, individual purchasers and coalitions as well as health plans have implemented pay-for-performance systems to reward providers for delivering high-quality care and to motivate quality improvement.

To understand the importance of these incipient "pay-for-performance" efforts, we describe the prevalence and structure of these initiatives as they are now being adopted in the U.S. health care system. We focus on specific design elements identified using key lessons from the literature on the impact of financial incentives on behavior and quality improvement.[2] These include the market leverage of spon-

Meredith Rosenthal (mrosenth@hsph.harvard.edu) is an assistant professor in the Department of Health Policy and Management, Harvard School of Public Health, in Boston, Massachusetts. Rushika Fernandopulle is executive director of the Harvard Interfaculty Program for Health Systems Improvement in Cambridge, Massachusetts. HyunSook Ryu Song is the assistant director of that program. Bruce Landon is an assistant professor in the Department of Health Care Policy, Harvard Medical School, in Boston.

DOI 10.1377/hlthaff.23.2.127

sors, the magnitude of rewards, the use of competitive versus noncompetitive models of incentives, the targeted dimensions of health care quality, and whether quality improvement (change) is explicitly part of the bonus calculation. Examining current initiatives according to these design principles yields predictions about the likely short- and long-run effects of these payment systems. The discussion highlights broad themes among the programs we describe and suggests directions for the next generation of pay-for-performance systems and key questions for health services research.

Why Pay For Performance?

One of the principal messages of the Institute of Medicine's (IOM's) 2001 Report, *Crossing the Quality Chasm*, is that U.S. health care quality falls short of established benchmarks based on the best available evidence.[3] A recent study documents this shortfall across a broad range of measures for appropriate preventive, acute, and chronic care.[4] Benchmarking of this type has repeatedly shown not only that performance is low relative to accepted standards on average, but also that adherence to recommended treatment patterns is extremely variable across regions and providers. This variation suggests that improvement is possible.

To date, purchasers and health plans have focused their efforts on profiling providers and publicly reporting information on their quality. This appeals to professionalism or organizational pride to drive quality improvement and also to the demand mechanism—in theory, consumers will "vote with their feet" and select the highest-quality providers. Despite major advances in quality measurement and reporting, studies of consumers' choices of health plans and hospitals continue to find that consumers fail to use available information on quality to inform their choices, even when quality measures appear to be highly salient.[5] More recently, purchasers have also begun tying consumers' financial incentives to measures of quality—for example, by varying health plan contributions or copayments according to quality ratings.

While these consumer-centered approaches continue to evolve, it is widely perceived that consumer choice alone will not provide sufficient impetus for providers to improve the quality of care. This is particularly the case in markets where the perceived high-quality providers are already inundated with patients.

Data Sources And Study Approach

We sought descriptive information on paying for health care quality in the United States in the past five years. Because of current policy interest in making a business case for quality to providers of health care, we focused on payments by health plans or purchasers (largely employers) to physicians and hospitals. This approach puts performance contracting between purchasers and health plans and medical group payments to individual physicians beyond the scope of our review. While we began with the scientific literature (using the MEDLINE online data-

base of peer-reviewed articles), only one recent paper has examined a detailed example of this type of payment arrangement.[6] In fact, only five other evaluations appear in the health services research literature on paying for quality during the past fifteen years, and these generally describe very small-scale interventions, such as nominal payments to increase immunization rates, which are unlikely to be generalizable to the broader efforts now envisioned.[7] The one exception is U.S. HealthCare's (now Aetna's) more comprehensive Quality Care Compensation System, which was introduced in 1987 and has been described elsewhere.[8]

We obtained information on the extent and characteristics of plans' and employers' efforts to pay for quality from several sources. First, we used Lexis/Nexis to search all major U.S. newspapers from January 1998 to September 2003, using combinations of the following keywords: physician, hospital, health plans, pay for performance, pay for quality improvement, financial incentive, bonus, reward, quality initiative, provider payment, and performance improvement. Once we identified potential cases to include in our review, we conducted further research on each one through either Internet searches or phone calls. We supplemented these data with a general Internet search using the Google search engine. Finally, we compared our information to previously released reports compiled by the National Health Care Purchasing Institute (NHCPI) and the American Medical Association (AMA).[9] Using this approach, we identified thirty-seven separate incentive plans representing thirty-one different payers (some payers had both a hospital and a physician quality incentive, which we counted separately). We excluded a small number of publicized interventions that were still in the formative stages and thus difficult to characterize (two notable examples are the nascent efforts associated with the Massachusetts HealthCare Quality Partnership's Rewarding Results grant and the Central Florida Health Care Coalition's plans to tier fees based on quality).

To draw conclusions about the nature and likely impact of the interventions, we focused on five main features. The first two, sponsor leverage and incremental revenue, address the idea that the larger the magnitude of the reward, the more responsive providers will be to incentives. We measured sponsor leverage as its share of the insured population in the state in which the program operates unless the plan or program was explicitly limited to a subset of counties or markets. In such cases, we used the insured population of the smaller area as the denominator for the share calculation. For health plans, we used 2001 InterStudy data as the source of enrollment data; for other types of sponsors, we relied on self-reports.[10] Ideally, we would have captured the share of the average targeted provider's business that is represented by the payer in question. Our market-share measure almost certainly understates payers' leverage, because it assumes that covered lives are spread out evenly across providers in a state, whereas many networks (especially health maintenance organizations, or HMOs) are more concentrated.

A third feature was targeted dimensions of quality, using the classic "structure,

process, outcome" taxonomy because of the implications for selection, gaming, and innovation.[11] This taxonomy distinguishes among the resources assembled to deliver care, including personnel, facilities, and materials (structure); the completion of specific tasks or recommended treatments (process); and the ultimate results of care, including patients' experience and health status (outcome). Paying for the adoption of structural measures of quality has the advantage of being free of case-mix influence, but it might not lead to desired outcomes if the structures are not used effectively. Process measures leave more discretion for alternative approaches to achieve the desired activity (for example, making sure that chronically ill patients are monitored regularly) but may be affected by patients' preferences or health status and thus could create fairness and selection concerns. Outcome measures are, of course, more directly what payers are attempting to improve but are influenced by many factors beyond the provider's control, including case-mix. The unpredictable elements of this variation will impose sizable risk on providers, while the predictable elements, unless adequate risk adjustment is used, will be the basis for selection. Among outcome measures, we distinguish between clinical outcomes and patient-experience measures, which may be differentially valued by sponsors.

The final two features influence how rewards are allocated across providers: whether or not providers compete for bonuses, with winners and losers, and whether targets are based on improvement or just good performance. Competitive bonus programs, also known as tournaments in the incentive literature, are thought to provide a stronger incentive to improve performance because even those with high baseline performance face the threat of not being rewarded if others improve and they do not. Noncompetitive programs, in which all providers have the opportunity to reach a fixed target or implement structural quality measures to obtain a share of the reward pool, may provide less of an incentive to improve quality. Targets based on quality improvement rather than absolute quality provide greater incentives for those with low baseline quality; if there are diminishing returns to quality improvement activities, it may actually be less costly for a provider at a low baseline level of performance than for one at a high level to improve quality.

Results

Before characterizing the programs as a group, we describe three prototypical examples to provide context for the summary analyses.

■ **Three examples.** *Centers for Medicare and Medicaid Services (CMS) and Premier Inc.* In July 2003 the CMS and Premier Inc., a nationwide organization of not-for-profit hospitals, announced a demonstration project to provide quality bonuses for hospitals based on performance related to treatment in five clinical areas that are critical for Medicare's elderly population: heart attack, heart failure, pneumonia, coronary artery bypass graft (CABG) surgery, and hip and knee replacements. Performance

measures include both process and outcome measures. For example, the proposed set of measures for CABG includes rates of aspirin prescribed at discharge, inpatient mortality, and postoperative hemorrhage or hematoma. Hospitals are to be scored and ranked by condition, and any hospital in the top 10 percent for a given condition will receive a 2 percent bonus on its Medicare payments; hospitals in the next decile will receive a bonus of 1 percent. In the third and final year of the demonstration, hospitals with the worst performance will be financially penalized.

PacifiCare of California (PCC) Quality Incentive Program (QIP). PCC is one of the seven participating health plans in the Integrated Healthcare Association (IHA) initiative that has aligned a large part of the health plan market in California behind a common set of measures to reward medical-group quality. The ten IHA domains (for 2003) are cervical cancer screening, mammography, childhood immunizations, diabetic hemoglobin A1c testing, screening of patients with coronary artery disease for elevated LDL cholesterol, satisfaction with medical group, satisfaction with primary care physician (PCP), satisfaction with referral process, satisfaction with specialist, and effective PCP communication.

The QIP builds on a series of efforts to use quality information to spur improvement, including sharing quarterly performance profiles with its network of physician organizations since 1995 and releasing medical group report cards since 1998. In July 2003 PCC began paying quarterly bonuses of up to $2 per PCC member per month for meeting or exceeding fixed targets for the ten common measures agreed upon by IHA members plus six measures of quality and patient safety for the hospital to which the group admits the majority of its patients.

Bridges to Excellence (BTE). BTE is a multilateral effort backed by a group of large employers to offer new financial incentives for physicians to improve health care quality in several target markets (Boston, Cincinnati/Louisville, and Albany/Schenectady). Three distinct initiatives have been launched by BTE, including the Diabetes Care Link, the Physician Office Link, and the Cardiac Care Link. Each "link" comprises a broad set of measures, each of which is accorded points toward an overall score. For example, the Physician Office Link sets standards for clinical information systems, patient education and support, and care management. Under this link, physicians can receive prorated bonuses for partial achievement of goals and may earn up to $55 per eligible patient. Under the Diabetes Care Link, the entire award ($100 per diabetic patient) is tied to participation in a recognition program sponsored by the American Diabetes Association and the National Committee for Quality Assurance (NCQA).

■ **Summary analysis.** Exhibit 1 lists the thirty-seven payment-for-quality programs that our search identified and reports sponsor leverage and targeted domains for each physician and hospital quality bonus program.

Sponsor leverage. Fourteen of the thirty-one sponsors whose programs we describe either were themselves a coalition or participated (for example, by adopting recommended measures as the basis of payment) in multilateral efforts related to

EXHIBIT 1
Summary Of Payment-For-Quality Strategies

Sponsor	Coalition[a]	Percent of insured population covered by sponsor[b]	Physician program (N = 28)	Hospital program (N = 9)
Aetna (CA)	Yes (IHA)	4	O-PE, P, S	
Anthem Blue Cross Blue Shield of NH	No	6	P	
Anthem Blue Cross Blue Shield Midwest (OH, IN, KY)	No	3	O-PE, PE (for OH)	O-CM, O-PE, P
Anthem Blue Cross Blue Shield of VA (formerly Trigon)	No	6	O-PE, P	O-PE, P
Blue Cross Blue Shield of IL	Yes (Bridges, Leapfrog)	9	P	O-PE, S
Blue Cross Blue Shield of MA	No	19	O-PE, P	
Blue Cross Blue Shield of MN	No	5	S	
Blue Cross Blue Shield of MI	Yes (Leapfrog)	7		P, S
Blue Cross Blue Shield of MO	No	4	O-PE, P	
Blue Cross Blue Shield of Rochester (Excellus) and Rochester IPA (NY)	No	40	O-PE, P	
Blue Cross of CA	Yes (IHA)	21	O-PE, P	
Blue Shield of CA	Yes (IHA)	11	O-PE, P, S	
Bridges to Excellence	Yes (Bridges)	3 Boston 10 Cincinnati-Louisville 6 Albany-Schenectady	P, S	
Buyers Health Care Action Group	–[c]	15	P, S	
Centers for Medicare and Medicaid Services (CMS) and Premier Inc.	No	40		O-CM, P
CIGNA (CA)	Yes (IHA)	3	O-PE, P, S	
CIGNA and Promina (GA)	No	1	O-PE, P	O-CM, O-PE, P
Empire Blue Cross and Leapfrog employers	Yes (Leapfrog)	4		S
Employer Coalition on Health	–[c]	13	P	
Harvard Pilgrim Health Care (MA)	No	5	P, S	
Hawaii Medical Service Association (Blue Cross Blue Shield of HI)	No	13	O-PE, P	O-CM, O-PE, P, S
HealthGuard (PA)	No	4	P	
Health Net	Yes (IHA)	12	O-PE, P	
HealthPartners (MN)	No	25	P	
Highmark Blue Cross Blue Shield (PA)	No	5	O, O-PE, P	
Independence Blue Cross (PA)	No	26	O-PE, P, S	O-CM, S
Independent Health (NY)	No	30	O-PE, P	
Integrated Healthcare Association (IHA) Local Initiative Rewarding Results (CA)	No	6	P	
PacifiCare (CA)	Yes (IHA, Leapfrog)	10	O-PE, P, S	
Tri-River Healthcare Coalition (OH)	–[c]	15	P, S	
Western Health Advantage (CA)	Yes (IHA)	4	O-PE, P, S	

SOURCE: Authors' analysis of publicly reported program descriptions.

NOTES: P = program focuses on process measures, such as Health Plan Employer Data and Information Set (HEDIS) diabetes or mammogram screening. O-PE = program focuses on patient-experience measures. O-CM = program focuses on clinical outcome measures, such as complications or mortality. S = program focuses on structure measures, such as Leapfrog measures for hospitals or information systems to track chronically ill patients. IHA is Integrated Healthcare Association.

[a] Sponsor participates in a coalition. Note that some sponsors also have efforts outside of the coalitions.

[b] In most cases, this measure reflects statewide share of insured lives covered by the plan or employer, based on 2001 InterStudy data. Where plans or programs were explicitly limited to a limited number of counties or metropolitan areas within a state (Blue Cross Blue Shield of Rochester, Bridges to Excellence, Empire Blue Cross/Leapfrog, Employer Coalition on Health, HealthGuard, PacifiCare, and Tri-River Healthcare Coalition), the figure reflects the share of insured people in those areas.

[c] These are coalitions themselves, not payers that are part of the named coalitions.

aligning quality incentives. We note in Exhibit 1 those plans that are involved with three of the largest efforts of this kind: the IHA, BTE, and Leapfrog Group. Because the IHA's members are concentrated in California, the effective leverage of each program is much higher. Summing across all seven IHA members, the total share of the relevant market exceeds 60 percent. For individual plans outside of coordinated efforts, the average share of the insured population is on the order of 10 percent. A major exception, of course, is the CMS, which has launched a paying-for-quality demonstration project with Premier Inc.

Targeted dimensions of quality. Most of the programs we examined focused on clinical process and structural measures. Patient-experience measures were also often included in physician bonuses, but they were typically weighted less than the clinical quality measures. For physicians, the process measures targeted are nearly always a subset of the Health Plan Employer Data and Information Set (HEDIS), particularly those that measure primary prevention, including cervical cancer screening, mammography, and immunizations, and secondary prevention for chronic illnesses such as asthma, diabetes, and coronary artery disease. Clinical outcome measures were rarely the basis of payment overall but were more common among hospital incentive programs where in-hospital mortality, complication, and readmission rates are widely used metrics. Some programs either implicitly or explicitly included cost or use measures alongside quality measures, and it was not always possible to discern the relative weighting of cost and quality.

■ **Competitive versus noncompetitive models.** Competitive bonus programs, which reward relative performance, were the most common overall (56 percent) with noncompetitive models used somewhat less often. In the competitive models, there were often two or more tiers that were eligible for a bonus, with reduced awards for lower tiers (Exhibit 2). Among the noncompetitive programs, the majority awarded bonuses based on meeting a fixed target or implementing systems (structures) (Exhibit 3). In these instances, bonuses were rarely prorated or tiered to reward partial achievement of the goal. A handful of programs meted out financial rewards based on a subjective determination, leaving some uncertainty about the connection between performance and payment.

Incremental revenue. For most programs, sponsors identified the maximum award in terms of incremental payment that could be gained with optimum performance. For comparison purposes, we converted the medical group bonuses that were reported as per member per month increments to a share of typical professional capitation rates of $40 per member per month. The process and outcome performance–based bonuses for physicians (and medical groups) ranged from less than 1 percent of payments by the sponsor ($0.30 per member per month or $3.60 per enrollee annually) for achievement on two measures, to about 10 percent for achievement on a broader range of clinical and service quality measures. Among those programs that reward physicians for putting specific systems in place or gaining special accreditation, we found the largest financial rewards as an esti-

EXHIBIT 2
Competitive Bonus Programs

Sponsor	Description of measures and formula for award	Incremental revenues[a]
Physician rewards		
Aetna (CA)[b]	IHA measures (see Exhibit 1): 6 clinical process, 4 patient satisfaction, and 2 IT capability measures; awarded to top 25% of medical groups for each measure	3.5%
Anthem Blue Cross Blue Shield of NH	Clinical process measures and disease management structures; awarded to top two quartiles of primary care physicians for each clinical process measure	$20 per member per year (~5%) top quartile; $10 per member per year for 3rd quartile; $20 per member per year for participating in disease management
Blue Cross of California[b] Physician Quality Incentive Program (PQIP)	Subset of IHA measures: mammograms, Pap smear, asthma measures, and patient satisfaction; increasing payment for 20th, 40th, 60th, and 80th percentiles	$4.50 per member per month (~10%)
Blue Cross Blue Shield of MA	8 HEDIS (clinical process) measures and 10 patient satisfaction measures	Unknown portion of 15% annual withhold
Blue Cross Blue Shield of MN	Competitive grants for quality improvement projects with technical assistance from care managers	Up to $50,000
Blue Cross Blue Shield of MO	HEDIS (clinical process) measures: cholesterol screening, asthma, mammography, diabetes, child immunization, patient satisfaction; target: increasing bonus for 5 strata of performance	8%
Blue Shield of CA[b]	IHA measures (see Exhibit 1); payments for 30th/50th/75th percentiles for clinical process measures and 50% of patient satisfaction award for average, 100% for above average; 50% of IT award for 1 IT activity and 100% for 2	$2 per member per month: $1 for clinical, $0.80 for patient satisfaction, and $0.20 for IT (~5%)
Buyers Health Care Action Group	Annual awards for patient safety and clinical quality projects, specific quality areas vary by year; applicants must meet thresholds for preventive care	2001: 2 awards of $100,000 and 2 of $50,000
CIGNA (CA)[b] Provider Group Rewards Program	IHA measures (see Exhibit 1); 50% of bonus for clinical measures, 40% patient satisfaction, 10% IT; 50th percentile or above receive award (increasing payment for higher score)	$1.60 per member per month (~4%)
CIGNA and Promina (GA)	HEDIS measures: diabetes, Pap smear, mammogram; patient satisfaction; 3 tiers of fees based on scoring	5% differential between tiers

EXHIBIT 2
Competitive Bonus Programs (cont.)

Sponsor	Description of measures and formula for award	Incremental revenues[a]
Physician rewards		
Harvard Pilgrim Health Care (MA)	Competitive grants for quality improvement programs available for medical groups/clinics	$50,000 per grant
Hawaii Medical Service Association (Blue Cross/Blue Shield of HI) Provider Quality and Service Recognition (PQSR)	Clinical and service quality measures	$13,600 per physician (for quality portion) (~5.5% of overall salary)
HealthGuard (PA)	HEDIS measures: diabetes, asthma, hypertension; award to top-rated physicians (unspecified percentile)	~$1 per member per month (2.5%)
Health Net (CA)[b]	IHA measures (see Exhibit 1); 50% of bonus for clinical measures, 40% patient satisfaction, 10% IT	$2.25 per member per month plus additional bonus for groups with individual physician bonus plan (~5.5%)
Highmark Blue Cross Blue Shield (PA)	HEDIS measures for beta-blocker treatment, cancer screening, cholesterol screening, diabetes; patient satisfaction; electronic connectivity; and member access; award to top 50%	1% bonus for 50th–59th percentile; 2% for 60th–69th; 4% for 70th–84th; 5% for 85th–100th
Independence Blue Cross (PA) Practice Quality Assessment Program (PQAS) and Quality Incentive Payment System (QIPS)	11 clinical process measures (50% of score) and satisfaction (50% of score); increasing awards across 16 performance strata	$2.30 per member per month (~5.5%)
Independent Health (NY)	Mammography, colorectal cancer screening, ER use, patient satisfaction, access	$1.50 per member per month (~4%)
Western Health Advantage (CA)[b]	IHA measures (see Exhibit 1)	Unknown
Hospital rewards		
CMS and Premier Inc. demonstration program	Clinical process measures related to heart attack, heart failure, CABG, hip/knee replacement, pneumonia; awards to top 20%	Top 10% for each measure receive a 2% bonus; second 10% receive a 1% bonus
CIGNA and Promina (GA)	Individual hospital performance: readmission rates, patient satisfaction score, other measures; top performers within health system eligible; award structure unspecified	Unknown
Hawaii Medical Service Association (Blue Cross/Blue Shield of HI) Provider Quality and Service Recognition (PQSR)	Clinical metrics: complications, patient satisfaction, best practices, and readmissions; top performers eligible; award structure unspecified	$1.1 million

SOURCE: Authors' analysis of publicly reported program descriptions.

NOTES: IT is information technology. HEDIS is Health Plan Employer Data and Information Set. ER is emergency room. CMS is Centers for Medicare and Medicaid Services. CABG is coronary artery bypass graft.

[a] Percentages reflect the approximate percentage of physician revenues from the plan. Where plans did not provide this figure, we used an average figure of $40 per member per month to estimate the share. The incremental revenue reflects the total amount that would be awarded for top performance on all measures.

[b] Member of Integrated Healthcare Association (IHA).

EXHIBIT 3
Noncompetitive Bonus Programs

Sponsor	Description of measures and formula for award	Incremental revenues[a]
Physician rewards		
Anthem Blue Cross Blue Shield (OH) and MaternOhio	Clinical process measures (mammograms, Pap smears), patient satisfaction; all physicians in medical group must meet target for any to receive bonus; target: 90% or above adherence to measures	5% (includes generic drug use measure)
Anthem Blue Cross Blue Shield of VA (formerly Trigon)	Proper antibiotic use, mammography, well-adolescent visit rates, advice to quit smoking, patient satisfaction; predetermined benchmarks for award (formula unknown)	Unknown
Blue Cross Blue Shield of IL	HEDIS measures and disease management; higher reimbursement rate awarded to medical groups that exceed thresholds; also participating in Bridges to Excellence	Unknown
Blue Cross Blue Shield of Rochester (Excellus) and Rochester IPA (NY)	Clinical process measures (asthma, diabetes), preventive care (prenatal care, immunizations), and service improvement	10%
Bridges to Excellence	See text; American Diabetes Association/NCQA Recognition for physicians who treat diabetic patients (min. 35 patients); clinical information system, chronic disease management, and patient education program targets for nondiabetic patients	$100 per diabetic patient; $55 per patient for office link/clinical management (~10%)
Employer Coalition on Health (Rockford, IL)	Diabetes disease management; awards for meeting thresholds for flowsheet completion and hemoglobin A1c	$0.30 per member per month (<1%)
Harvard Pilgrim Health Care (MA)	Single provider contract: Partners Community Healthcare HEDIS measures for diabetes and asthma; awards for meeting preset thresholds	Part of annual withhold; unknown
HealthPartners (MN)	Clinical process measures including HEDIS scores for diabetes, pediatric immunizations, tobacco cessation efforts, behavioral health, adult preventive care, and coronary artery disease; awards for meeting annual fixed targets for each measure (for example, smoking cessation counseling = 81% for 2002)	Care system awards from $100,000 to $300,000
Integrated Healthcare Association (CA) Local Initiative Rewarding Results (LIRR)	Coalition of Medi-Cal plans bonuses for well-baby and adolescent visits, encounter data improvement in conjunction with nonfinancial incentives	Pay-per-visit amounts unknown

EXHIBIT 3
Noncompetitive Bonus Programs (cont.)

Sponsor	Description of measures and formula for award	Incremental revenues[a]
PacifiCare (CA)[b] Quality Incentive Program	In conjunction with report card (Quality Index) and quarterly profiling; in 2003, IHA measures for clinical and patient satisfaction but no IT, plus 6 hospital quality measures for primary hospital; bonus for 75th percentile for each measure	$3 per member per month with Medicare enrollees, $2 per member per month for commercial only (~7%)
Tri-River Healthcare Coalition (OH)	Process and structural measures for enrolling patients in care management, disease management developing patient education Web site	$2 per member per month (~5%)
Hospital rewards		
Anthem Midwest (OH, IN, KY)	Comprehensive benchmarking report with clinical process and outcome measures, patient experience tied to rate increases by undisclosed formula reflecting hospital-specific improvement goals	Unknown
Anthem of Virginia (formerly Trigon) Quality-in-Sights Hospital Incentive Program	Patient safety (30%), clinical process and outcome measures for cardiac care and pregnancy or pneumonia (55%), and patient satisfaction (15%) tied to rate increases by formula	1% (increasing over time)
Blue Cross Blue Shield of IL	Clinical quality and patient safety targets including Leapfrog measures; subjective determination of additional reimbursement	Unknown
Blue Cross Blue Shield of MI	Clinical quality and patient safety targets including Leapfrog measures; annual change of targeted measures	~3%
Empire Blue Cross and Leapfrog employers	Leapfrog standards for implementation of CPOE and ICU staffing, 40%/60% of bonus, respectively	4% for 2002, 3% in 2003, and 2% in 2004
Independence Blue Cross (PA)	Quality-of-care standards for readmission, mortality and morbidity, Leapfrog standards	Unknown (portion of 4% bonus)

SOURCE: Authors' analysis of publicly reported program descriptions.

NOTES: IT is information technology. HEDIS is Health Plan Employer Data and Information Set. ER is emergency room. NCQA is National Committee for Quality Assurance. CPOE is computerized physician order entry. ICU is intensive care unit.

[a] Percentages reflect the approximate percentage of physician revenues from the plan. Where plans did not provide this figure, we used an average figure of $40 per member per month to estimate the share. The incremental revenue reflects the total amount that would be awarded for top performance on all measures.

[b] Member of Integrated Healthcare Association (IHA).

mated percentage of fees per enrollee. For the covered population, BTE offers up to $55 per patient for implementing a series of quality improvement modules in three categories, which the sponsor suggests could amount to approximately 10 percent of a physician's income. For one-time grants and competitive award programs, we found two health plans that offered up to $50,000 in competitive infrastructure

"Perhaps it is a good thing to use payment arrangements to enforce quality competition, since the market has been unable to do so."

grants (along with technical assistance) and one program that gave awards of $100,000 and $50,000 to selected providers.

Rewarding quality improvement. We were surprised to find almost no emphasis on quality improvement in the payment arrangements we reviewed. In one case, Harvard Pilgrim Health Care, the quality bonus was offered to a single hospital network/health system and was couched in terms of improvement relative to baseline. In this case, however, there is no operational difference between a quality improvement target and a fixed target (since there is only a single provider). There were no other programs in which quality improvement was explicitly mentioned as the basis for computing awards.

Discussion

In our search for examples of paying for quality, we found thirty-one separate sponsors of such arrangements, covering more than twenty million enrollees. Because of our focus on programs that were publicized in the press or on the Internet, there are probably other similar programs that we have not described. Because of the high degree of homogeneity we found, however, it would be surprising if the addition of a few other cases altered our conclusions much.

There is much commonality in the basic structure of these programs. The vast majority of incentive arrangements target a mix of process and structural measures with a smaller role for patient experience measures, and the sponsor nearly always rewards good performance rather than improvement. This puts physicians or hospitals that have already figured out how to deliver good quality health care along the targeted dimensions at an advantage. These providers deserve to be rewarded for past efforts, undertaken in an environment less supportive of high-quality health care delivery. This rewarding of historical investments in quality, however, strikes us as not altogether consistent with the stated goals of most of the programs: to improve quality for all enrollees/beneficiaries.

Physicians and hospitals that have a long way to go in terms of meeting absolute targets or are ranked low among their peers are less likely to find it worthwhile to strive for these bonuses. Moreover, because many programs use competitive models, with explicit winners and losers, these systems likely will result in redistribution of reimbursement from "low-quality" to "high-quality" providers and maybe the demise of some "low-quality" providers. Perhaps it is a good thing to use payment arrangements to enforce quality competition, since the market has been unable to do so. But one could argue that low-quality providers are precisely the ones that need increased resources to improve their quality. In this view, if bonuses cannot be explicitly structured around quality improvement, then grants or incen-

tives related to structural measures of quality might be better suited to simultaneously bringing up average quality and reducing variance across providers.

The few published evaluations of quality incentives describe programs in which a single clinical area or measure was targeted; this generation of paying for quality takes aim at a multidimensional notion of quality, including patients' experience. Incorporating a broad array of quality measures in an incentive program, as many of the examples we found do, appears to be an attempt to deal with what economists refer to as the "multitasking" problem. That is, if providers face a number of tasks and resources are limited, then effort will be allocated toward those tasks that are explicitly rewarded, taking resources away from other activities. By choosing to attach financial rewards to a larger set of tasks, payers can elevate and protect key priorities from these negative spillover effects. Inevitably, however, the dimensions of care that will receive the most attention will be those that are most easily measured and not necessarily those that are most valued. In addition, the focus on individual measures may discourage more unified quality improvement efforts that ultimately could prove more effective or efficient. For example, attaching rewards to secondary prevention for specific conditions such as diabetes or asthma may encourage condition-specific care management when integrated care management might be most efficient, because of high rates of comorbidity. Similarly, financial rewards for improving childhood immunization rates might lead to interventions that are narrowly targeted for this population instead of systems for tracking and assuring appropriate preventive care more generally.

A rough approximation suggests that payers have put aside more than $200 million for these programs in 2004 (of course actual payouts may be much less). At the same time, we wonder if the incremental rewards for quality for any one provider will be sufficient to motivate the kind of change that is needed. Most programs put 5 percent or less of compensation at risk for performance on quality, and many simultaneously target ten or more separate clinical areas. Moreover, because few sponsors command a large share of the average provider's business, the quality incentive is further diluted by competing incentives.

Improving quality of care in the U.S. health care system has some elements of a public-good problem: Investments by one payer accrue benefits to other payers because of nonexclusive contracting (overlapping networks), and by corollary no individual payer will invest enough in trying to bridge the quality chasm. Purchasing coalitions and other multilateral entities such as the IHA, BTE, and Leapfrog have emerged to overcome this problem in part, but our data suggest that most paying-for-quality initiatives are relatively small in scale.

Looking Ahead

While no systematic evaluations have yet been conducted with regard to either the intended or unintended consequences of paying for quality, the current level of enthusiasm for these programs suggests to us that their diffusion will continue.

Aligning providers' financial incentives with quality goals may be a necessary precursor to improvement, but it is probably not sufficient. Rather, quality-incentive programs should be viewed as part of a broader strategy of promoting health care quality through measuring and reporting performance, providing technical assistance and evidence-based guidelines, and, increasingly, giving consumers incentives to select higher-quality providers and proactively manage their own health.

Much uncertainty exists as to precisely how and how much providers will respond to the new payment incentives, but our review suggests some early predictions. Based on the design features of the programs in the aggregate, we expect that, at least initially, paying for quality will entail compensating historically high-quality providers, with less emphasis on overall quality improvement in the system. Some lower-quality providers may be sufficiently motivated to make the investments necessary to reach for bonuses, but many may find that the costs exceed the modest financial benefits from doing so. Over time, however, the programs may begin to reward quality improvement more directly, particularly if they find that the same providers receive bonuses every year.

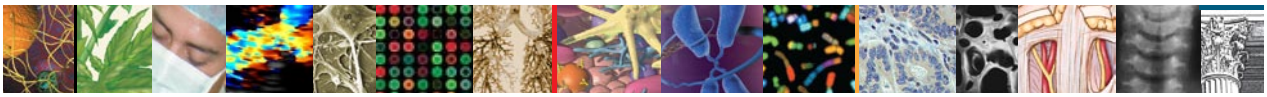
These pay-for-performance initiatives are still in their infancy, and we expect many changes as they evolve. By using price as well as volume as a lever, they represent a new phase in the effort to improve quality of care. Despite good intentions, however, there are a number of concerns with their design, including whether their size and scope are sufficient to motivate and support the necessary structural investment and behavioral change, if they will raise quality in those already performing well or across the board, and whether they will lead to selection against sicker or less adherent patients. For all of these reasons, we believe that it is crucial for timely evaluation to be an integral part of the design of these experiments and for these results to help improve the next generation of programs.

In the near term, evaluations of paying-for-quality interventions should focus on whether and by how much bonuses accelerate quality improvement in targeted areas (generally care processes) and to what extent these gains come at the cost of losing ground in other quality areas. To be informative, this research will be data-intensive, requiring time-series data on targeted and other measures for the intervention group and a credible comparison group. As we suggested earlier, distributional effects (for example, which groups of targeted providers receive bonuses or achieve accelerated improvement) also should be tracked because of the possibility that some programs may exacerbate existing quality differentials across providers (and thus consumers). Finally, paying for quality will entail financial costs to the system, so these programs should be judged based on some notion of value or cost-effectiveness relative to alternative interventions for improving health care quality.

Meredith Rosenthal and Bruce Landon acknowledge funding from Agency for Healthcare Research and Quality (AHRQ) Grant no. P01-HS10803-01. Rosenthal's work was also supported by the Harvard Interfaculty Program for Health Systems Improvement. The authors are grateful to Pranav Kothari for his help with initial research on cataloging pay-for-performance efforts.

NOTES

1. J.P. Newhouse, "Why Is There a Quality Chasm?" *Health Affairs* (July/Aug 2002): 13–25; and S. Leatherman et al., "The Business Case for Quality: Case Studies and an Analysis," *Health Affairs* (Mar/Apr 2003): 17–30.
2. See, for example, C. Prendergast, "The Provision of Incentives in Firms," *Journal of Economic Literature* 37, no. 1 (1999): 7–63; A. Donabedian, *The Definition of Quality and Approaches to Its Assessment, Volume I: Explorations in Quality Assessment and Monitoring* (Ann Arbor, Mich.: Health Administration Press, 1980); O. Hart and B. Holmstrom, "The Theory of Contracts," in *Advances in Economic Theory: Fifth World Congress*, ed. T.F. Bewley (Cambridge: Cambridge University Press, 1987); and T.G. McGuire and M.V. Pauly, "Physician Response to Fee Changes with Multiple Payers," *Journal of Health Economics* 10, no. 4 (1991): 385–410.
3. Institute of Medicine, *Crossing the Quality Chasm: A New Health System for the Twenty-first Century* (Washington: National Academies Press, 2001).
4. E.A. McGlynn et al., "The Quality of Health Care Delivered to Adults in the United States," *New England Journal of Medicine* 348, no. 26 (2003): 2635–2645.
5. E.C. Schneider and A.M. Epstein, "Use of Public Performance Reports: A Survey of Cardiac Surgery Patients," *Journal of the American Medical Association* 279, no. 20 (1998): 1638–1642; N.D. Beaulieu, "Quality Information and Consumer Health Plan Choice," *Journal of Health Economics* 21, no. 1 (2002): 43–63; D.P. Scanlon et al., "Health Plan Report Cards: Exploring Differences in Plan Ratings," *Joint Commission Journal on Quality Improvement* 24, no. 1 (1998): 5–20; and M. Chernew and D.P. Scanlon, "Health Plan Report Cards and Insurance Choice." *Inquiry* 35, no. 1 (1998): 9–22.
6. G. Amundson et al., "Paying for Quality Improvement: Compliance with Tobacco Cessation Guidelines," *Joint Commission Journal on Quality and Safety* 29, no. 2 (2003): 59–65.
7. A.L. Hillman et al., "The Use of Physician Financial Incentives and Feedback to Improve Pediatric Preventive Care in Medicaid Managed Care," *Pediatrics* 104, no. 4 (1999): 931–935; A.L. Hillman et al., "Physician Financial Incentives and Feedback: Failure to Increase Cancer Screening in Medicaid Managed Care," *American Journal of Public Health* 104, no. 4 (1998): 1699–1701; G. Fairbrother et al., "The Impact of Physician Bonuses, Enhanced Fees, and Feedback on Childhood Immunization Coverage Rates," *American Journal of Public Health* 89, no. 2 (1999): 171–175; R.W. Kouides et al., "Performance-Based Physician Reimbursement and Influenza Immunization Rates in the Elderly. The Primary-Care Physicians of Monroe County," *American Journal of Preventive Medicine* 14, no. 2 (1998): 89–95; and S.M. Geron, "Regulating the Behavior of Nursing Homes through Positive Incentives: An Analysis of Illinois' Quality Incentive Program (QUIP)," *Gerontologist* 31, no. 3 (1991): 292–301.
8. See, for example, N.A. Hanchak, N. Schlackman, and S. Harmon-Weiss, "U.S. Healthcare's Quality-Based Compensation Model," *Health Care Financing Review* 17, no. 3 (1996): 143–159.
9. National Health Care Purchasing Institute, "Profiles of Organizations Using Quality Incentives," 2003, www.nhcpi.net/pdf/profiles.pdf (30 August 2003).
10. InterStudy, *The Competitive Edge Database* (St. Paul: InterStudy, 1998).
11. Donabedian, *The Definition of Quality.*



The NEW ENGLAND JOURNAL of MEDICINE

Perspective

SEPTEMBER 18, 2008

Beyond Pay for Performance — Emerging Models of Provider-Payment Reform

Meredith B. Rosenthal, Ph.D.

Escalating costs and the growing imbalance between primary and specialty care have increased the urgency of calls for fundamental reform of the health care payment system. At the core of the problem is the fact that the dominant fee-for-service model rewards volume and intensity rather than value. But although the faults in the way we currently pay for health care are obvious, it is much less clear what feasible approach would yield better results.

Earlier this decade, pay for performance took center stage as a tactic for realigning payment with value. Payers' experiences during this period, as well as several major studies, clarified the limitations of this approach — characterized by some as putting lipstick on a pig. Both the enthusiastic adoption and somewhat lackluster early results of pay for performance have given rise to a broader payment-reform movement, with proposals and pilots emerging from a wide variety of stakeholders and policy leaders (see table).

The contours of proposed reforms of the health care payment system follow the fault lines of current reimbursement models — either undoing perverse incentives in existing payment approaches or augmenting the incentives for providing high-value care. A number of incremental payment-reform models that have gained traction over the past several years address individual issues; more ambitious reform proposals attempt to correct multiple shortcomings.

Among the incrementalist approaches embraced by many payers is enhancement of existing pay-for-performance programs through changes in scope, performance measures, and magnitude of funding. The changes appear to be focused on two perceived shortcomings of earlier efforts: too little impact on provider behavior and not enough focus on demonstrable benefit — including both health outcomes and spending — as opposed to process-of-care measures. At the same time, nonpayment for treatment of preventable complications has emerged as the mirror image of pay for performance. Early adopters of this approach, including HealthPartners in Minnesota, refuse to pay for "never events" (rare and preventable errors or complications); the Centers for Medicare and Medicaid Services (CMS) has cast a somewhat broader net, aided in part by new "present-on-admission" diagnostic codes.

Emerging Models of Payment Reform.*

Source or Model	Description	Stage of Development
Incremental reforms: nonpayment for avoidable complications		
HealthPartners, CMS	Nonpayment for "never events" (e.g., surgery performed on the wrong body part, HealthPartners) and other preventable inpatient complications (e.g., catheter-associated urinary tract infections, CMS)	Implemented by HealthPartners Jan. 1, 2005, and by CMS Oct. 1, 2008
Primary care payment reform		
American Academy of Family Physicians, American College of Physicians, American Osteopathic Association, American Academy of Pediatrics	Tiered case-management fees (in addition to fee for service) paid per member per month to practices that demonstrate structural characteristics of a medical home, such as maintenance of disease registries and patient-education capabilities; performance incentives typically included	Pilots under development or in place include individual health plans, Medicare, Medicaid, and involved coalitions; specific examples include Group Health Incorporated and the Health Insurance Plan of New York as well as the Chronic Care Sustainability Initiative (multipayer initiative in Rhode Island that includes Medicaid)
Comprehensive Primary Care Payment and the Massachusetts Coalition for Primary Care Reform†	Primary care capitation with performance incentives; per-member, per-month payment rate based on accounting for costs of medical home, including, for instance, a $250,000 salary for the primary care physician; the salaries of a part-time nutritionist, part-time social worker, nurse, nurse practitioner, and medical assistant; office expenses; and the costs of setting up electronic health records and employing a data manager	Pilot under development
Episode-based payment		
Prometheus	Episode-based payment model that defines global case rates for given conditions (e.g., acute myocardial infarction, diabetes, and knee replacement); payment amounts informed by cost of adhering to clinical standards of care; risk stratification and complication allowance; performance incentives based on comprehensive score card	Pilot under development
Geisinger Health System, ProvenCare	Episode-based payment for elective coronary-artery bypass grafting; 90-day global fee paired with high-reliability process improvements to achieve 40 best-practice standards	In use; expanding to other conditions and types of acute episodes
Shared savings		
Medicare Physician Group Practice Demonstration	Large, integrated groups may earn bonuses for demonstrating slower growth in spending for patient care relative to peers; any savings above 2 percentage points are shared with CMS, with up to 80% for the physician group; quality of performance affects share of savings (no quality bonus without savings)	Began in 2005; intended to last 3 years
Alabama Medicaid	Primary care physicians are eligible to share in savings according to their performance on use of generics, emergency department visits, office visits, and an index of actual-versus-expected total of allowed charges	Launched in 2004; payments began in 2007

* CMS denotes Centers for Medicare and Medicaid Services.
† See Goroll et al.[1]

The downward spiral of the primary care profession in terms of compensation, professional satisfaction, and numbers of new entrants to the field has sparked a payment-reform movement specifically focused on primary care. Prominent among these efforts has been a set of proposals wrapped around the notion of a "medical home" (sometimes called the "patient-centered" or "advanced" medical home). The medical home is a set of philosophical and structural elements designed to ensure

that a physician practice (usually in primary care) takes responsibility for providing and coordinating timely and appropriate care for its patients.[2] The medical-home payment model typically includes a case-management fee, tiered according to the extent and sophistication of office systems and other practice capabilities attained, and pay for performance to support the delivery of optimal preventive and chronic-disease care.

An alternative vision for primary care payment that acknowledges the functions encapsulated in the medical-home concept goes further by replacing fee-for-service payment with primary care capitation.[1] This "comprehensive" payment model advocates payments computed (over a typical patient-panel size) to cover salaries for a multidisciplinary clinical team, infrastructure costs (e.g., the cost of implementing electronic health records), and other practice expenses that are deemed necessary for building a functioning medical home. Although primary care physicians would not pay for downstream costs such as referrals, the model includes substantial performance incentives for quality and cost efficiency (amounting to 15 to 25% of total payments).

Outside the primary care arena, some groups are turning to episode-based payment systems such as Prometheus Payment, developed by a panel of experts and stakeholders. Global case-payment rates for a given condition are developed on the basis of clinical standards for appropriate care rather than solely through examination of current patterns of care, which reflect high rates of underuse, misuse, and overuse. Calculation of payments includes risk adjustment and a warranty for care in the event of related complications. Performance incentives (equal to 10 to 20% of the case-payment rate) related to clinical quality, patient experience, and cost efficiency are also part of the model.

Geisinger Health System's ProvenCare payment concept is also based on clinical quality standards as applied to a defined episode of treatment.[3] For elective coronary-artery bypass surgery, for example, the ProvenCare payment includes preoperative care, all services associated with the surgery and inpatient stay, plus 90 days of follow-up care. The episode price set by the health system is based on the cost of routine services plus an amount equal to half the average cost of complications.

Meanwhile, the Medicare Physician Group Practice Demonstration program is a leading example of the shared savings model of payment reform, which resembles the soft capitation contracts of the 1990s. In this program, participating group practices agree to manage the care of a population of Medicare patients with the prospect of sharing in savings that accrue to Medicare. Savings are calculated as the difference between actual spending and the risk-adjusted spending trend in a given market. Once this difference surpasses 2 percentage points, savings are shared with the integrated physician groups involved, which can receive up to 80% of these savings by performing well on cost-efficiency and quality measures.

Similarly, in late 2004, the State of Alabama instituted a program whereby 50% of any documented savings associated with primary care physicians in the state's primary care case-management program is shared with those physicians. Shared savings are allocated according to a point system that takes into account physicians' scores on three risk-adjusted measures of performance (use of generic medications, emergency department use, and number of office visits) and an index of their actual-versus-expected total of allowed charges.

Although these approaches to payment reform span a wide range of models, a number of common themes emerge. The first is value-based payment: although cost control is a major goal of most reforms, clinical guidelines and quality measures play important supporting roles. For example, both the episode-based and comprehensive primary care payment models require payment levels to cover the costs of explicitly defined "best practices."

The second theme reflects a lesson from earlier iterations of capitation-payment systems: the need to distinguish random variation in outcomes and patient mix from variation in practices and avoidable complications. The new CMS hospital payment rule is the most obvious example of an attempt to make such distinctions, but both the episode-based payment models and shared-savings approaches involve this type of accounting.

Finally, many of the payment approaches are inseparable from specific care delivery and organizational models. The medical homes are the most explicit examples of this trend, but it is also noteworthy that Medicare's shared-savings model was piloted only in large, integrated health care systems. Policy developments in new models of accountability

share this view that aligning provider incentives with payer goals will require organizational forms that can coordinate care more effectively than the fragmented current system.[4]

There are, fundamentally, no "new" methods of health care payment. Novel approaches such as those described here are new combinations of old ideas, with updated features such as improved risk adjustment. Economic theory, as others have long noted, suggests that such mixed payment models will function better than any single approach.[5] Which recipe will yield the best balance of meaningful incentives for cost control and quality improvement, risk protection for providers, and selection incentives remains to be seen. The prospects for payment reform, however, hinge more on politics than on economics. Given that the two major goals of reform are to constrain spending growth and to move money from more intensive to less intensive settings — from doctors who carry endoscopes and scalpels to primary care physicians, for example — there will be substantial resistance to even the best-designed plans.

Dr. Rosenthal reports having an unpaid role in the design and testing of the Prometheus Payment system. No other potential conflict of interest relevant to this article was reported.

Dr. Rosenthal is an associate professor of health economics and policy at the Harvard School of Public Health, Boston.

1. Goroll AH, Berenson RA, Schoenbaum SC, Gardner LB. Fundamental reform of payment for adult primary care: comprehensive payment for comprehensive care. J Gen Intern Med 2007;22:410-5.
2. American Academy of Family Physicians, American College of Physicians, American Osteopathic Association, American Academy of Pediatrics. Joint principles of the patient-centered medical home (PC-MH). March 5, 2007. (Accessed September 2, 2008, at http://www.acponline.org/pressroom/pcmh.htm.)
3. Casale AS, Paulus RA, Selna MJ, et al. "ProvenCareSM": a provider-driven pay-for-performance program for acute episodic cardiac surgical care. Ann Surg 2007;246:613-23.
4. Fisher ES, Staiger DO, Bynum JP, Gottlieb DJ. Creating accountable care organizations: the extended hospital medical staff. Health Aff (Millwood) 2007;26(1):w44-w57.
5. Ellis RP, McGuire TG. Provider behavior under prospective reimbursement: cost sharing and supply. J Health Econ 1986;5:129-51.

No Place Like Home — Testing a New Model of Care Delivery

John K. Iglehart

Seeking ways to slow the growth of Medicare spending and to better coordinate the health care it finances, the federal government is preparing to test the concept of the "medical home" in the Medicare program. In response to a mandate in the Tax Relief and Health Care Act of 2006, the staff at the Centers for Medicare and Medicaid Services (CMS) is developing a demonstration program that will operate for 3 years in rural, urban, and underserved areas in up to eight states. Congress has directed the agency to use the program to "redesign the health care delivery system to provide targeted, accessible, continuous and coordinated, family-centered care to high-need populations." Reluctant to constrain the freedom of beneficiaries currently covered under the traditional fee-for-service model, however, Congress placed no limits on patients' freedom to seek treatment, without a referral, from physicians not affiliated with their medical home and made virtually all practices eligible to participate in the demonstration program.

There is no consensus definition of the term "patient-centered medical home," a concept that was introduced by the American Academy of Pediatrics (AAP) in 1967 with the aim of improving health care for children with special needs. Over the years, the AAP, the World Health Organization, the Institute of Medicine, the American Academy of Family Physicians (AAFP), Dr. Edward Wagner (director of the W.A. MacColl Institute for Healthcare Innovation at the Center for Health Studies in Seattle), and others have honed this model, expanding its scope and placing more emphasis on adults with chronic conditions. In 2007, the AAFP, the AAP, the American College of Physicians, and the American Osteopathic Association issued principles defining their vision of a patient-centered medical home.[1] The core features include a physician-directed medical practice; a personal doctor for every patient; the capacity to coordinate high-quality, accessible care; and payments that recognize a medical home's added value for patients. With the possible exception of some multispecialty group practices, this model remains largely an aspiration — a type of care

POLICY BRIEF

Using Physician Payment Reform to Enhance Health System Performance

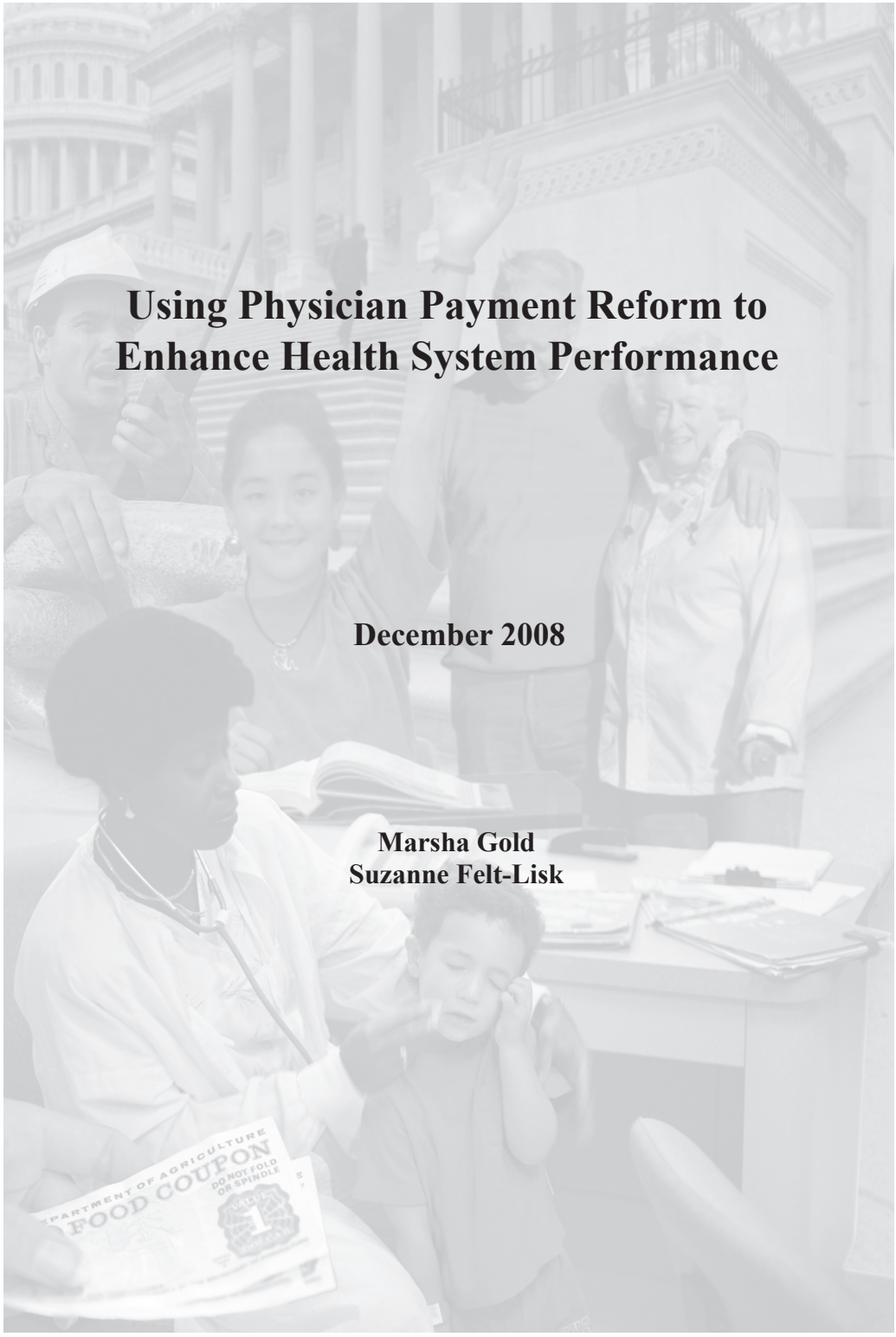
December 2008

Marsha Gold

Suzanne Felt-Lisk

MATHEMATICA
Policy Research, Inc.

POLICY BRIEF



Using Physician Payment Reform to Enhance Health System Performance

December 2008

Marsha Gold
Suzanne Felt-Lisk

Using Physician Payment Reform to Enhance Health System Performance

The U.S. health care system performs poorly on many key objectives.

The U.S. health care system performs poorly on many key objectives. Services are overused, underused, and misused (McGlynn et al. 2003). Per capita spending varies widely across geographical areas in ways unrelated to need or quality (Wennberg and Fisher 2006; Fisher et al. 2003; Gold 2004). Although our nation expends more per capita on health care than any other country in the world, its outcomes are worse on many measures, health insurance coverage is spotty and unstable, and equity remains a concern (Davis et al. 2007).

One strategy to address these concerns involves reforming the system used to pay physicians, who are central to care delivery and drive a large share of national health expenditures. By design, financial incentives in a payment system will influence what physicians do, and will affect resource use and distribution. If we are not getting what we want from the health care system, changing payment methods can help align physician performance with broader goals for the system.

Well-designed changes in physician payment incentives can drive system change because physicians play a major role in determining use, content, and costs of services that others provide, including laboratory and radiology tests, hospitalizations, home health and skilled nursing care, and drugs and medical devices (see figure on page 2).

This brief builds on what we know and what we think we know about using physician payment to improve health system performance, suggesting that future priorities move beyond pay for performance of individual services and reward physicians for influencing totality of a patient's care across all providers and settings. The goal of the brief is to help public and private sector leaders think about and set priorities for future physician payment reform.

The Issues at a Glance

Changes in how physicians practice can spur improvement . . .

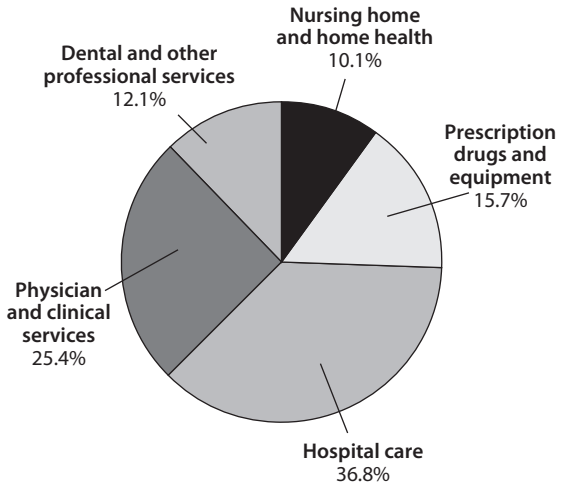
Improving the payment system used to compensate and reward physicians will enhance the performance of our nation's health care system. But attempts to improve the system must address the following operational constraints: (1) fragmented medical practices, (2) payments that reward volume and procedures, (3) erosion in incentives for providing primary care, (4) narrow and limited performance measures, and (5) factors other than financial incentives that influence physician behavior.

Research on physician pay-for-performance (P4P) to date has yielded valuable insights:

- First-generation physician P4P has produced marginal gains at best.
- The design of incentive programs is important and has influenced outcomes.
- Limited infrastructure in smaller practices providing a high proportion of care systemwide has limited P4P's effectiveness.
- The structure of basic payment incentives has curbed P4P's effectiveness.
- Physician support is critical to success.

In the future, attention must be paid to (1) moving beyond P4P for individual services to reward physicians for influencing totality of a patient's care; (2) factoring in equity considerations; (3) enhancing the role of primary care and care coordination; (4) aligning incentives across providers; and (5) promoting "value" while recognizing the tensions associated with decisions about how to use limited resources.

Personal Health Spending, United States, 2006



Source: Author's calculations from the Centers for Medicare & Medicaid Services National Health Expenditures Account, as referenced in Keehan et al. 2008.

Note: Excludes spending for program administration and insurance, government public health activities, and research and capital structures/equipment. With these included, total national health spending was $2,105.5 billion in 2006, or $7,027 per person.

Defining Desired Performance

Before physician payments are changed to enhance the performance of our health care system, it is important to articulate what good performance means.

Before physician payments are changed to enhance the performance of our health care system, it is important to articulate what good performance means. In its influential report on the health care "quality chasm," the Institute of Medicine conceptualizes quality as a property of the health care system and calls for a safe, effective, patient-centered, timely, efficient, and equitable system (IOM 2001). Similar thinking underlies the Commonwealth Fund's definition of a high performing system (Commonwealth Fund Commission 2007). Recently, the National Priorities Partnership (2008)—a collaboration of 28 major national public and private organizations convened by the National Quality Forum—identified six areas for immediate attention: (1) engaging patients and families in their care; (2) improving population health; (3) improving safety and reliability of the health care system; (4) ensuring coordination of care within and across organizations, settings, and levels of care; (5) guaranteeing appropriate and compassionate end-of-life care; and (6) eliminating overuse of services and delivering appropriate care.

If these concepts of quality reflect what we seek in our nation's health care system, enhancing system performance will require more than upgrading how well individual services are performed and each provider behaves. Merely improving individual services can perpetuate care discontinuities, redundancy, and conflicting treatments that raise costs and lower quality and outcomes. Although there is debate over how to balance quality and cost to provide optimal financial incentives, they are intrinsically connected in a way that is fundamental to the desired, yet ill-defined, "value" in our health care system.

Operational Realities

. . . communication is more complex when providers practice independently.

Fragmented Medical Practices. Although physician practices are becoming more consolidated, they remain relatively fragmented. The number of physicians in solo and two-physician practices has declined, but a third of all physicians still practiced in such settings in 2004-2005 (Liebhaber and Grossman 2007). Large multi-specialty groups dominate markets such as California and the upper Midwest, but movement toward these forms of practice has slowed. More physicians now practice together in midsized multi-specialty groups, and more physicians operate in institutional or large group settings (Tu and Ginsburg 2006). While policymakers debate the importance of practice consolidation, communication is more complex when providers practice independently.

Practice setting affects not only the way physicians operate but also the potential influence of financial incentives. Integrating quality improvement tools—such as electronic medical records, registries, and care managers—into small physician practices is challenging. Large group and institutional practices are likely to have both greater access to the capital required for technology investments and larger patient bases across which to spread the fixed costs. Furthermore, research links scale, cohesion, and affiliation of groups with quality (Tollen 2008).

Diversity in physician practice settings and variation across markets present challenges to changing performance. Shifting payment incentives, while unlikely in the short term, could ultimately alter economics of practice, encouraging larger and redesigned medical practices.

Existing payment systems that differ by physician practice setting also mean the same service may be paid in different ways when billed directly by a physician or included as part of payments to facilities. Medicare, for example, pays physicians using a fee schedule, with updates limited by total physician expenditures for category of service, while hospital outpatient services are paid using prospective payment to facilities (MedPAC 2007a, 2007b). Variability in payments does not necessarily encourage delivery of care in more efficient settings.

Payment Systems Reward Volume and Procedures. Physicians are paid in three fundamentally different ways: salary, capitation, and fee-for-service. Each creates its own incentives, with offsetting strengths and weaknesses (Town et al. 2004; Christianson et al. 2007). Paying physicians for each service provided encourages them to be productive by seeing many patients, but it may also promote services—whether needed or not—that are more highly compensated. Although capitation encourages physicians to see more patients, underusing, rather than overusing, services is the concern in this context. Salaried arrangements are volume-neutral but provide few incentives for physicians to be productive and see more patients.

To counter these limitations, supplemental payments can provide offsetting influences, such as productivity incentives for salaried arrangements or quality rewards for capitated physicians. But structuring incentives for individual physicians is complicated by the fact that payment may not be the same at the practice and individual physician levels. For example, in California, where large physician groups are common, 84 percent of group revenue comes from capitation, but most financial risk is retained at the group level (Rosenthal et al. 2002). If individual physicians are capitated, it usually is for only their own services.

. . . most physicians today continue to be paid on a fee-for-service basis.

Although changes in practice settings have made salaried arrangements more common, most physicians today continue to be paid on a fee-for-service basis. In 2004-2005, more than half of all physicians surveyed received no revenue on a capitated or other prepaid basis (CTSonline 2008). Fee schedules and other ways of determining payments for individual physician services have developed in a way that favors payment for procedures and tests over payment for direct physician services (that is, visits, or what Medicare calls "evaluation and management services"). This situation has also resulted in the use of more resource-intensive services (Newhouse 2005-2006). Over time, inequities have grown, with physician fees in both the public and private sectors increasingly lagging behind general inflation, while volume of services is rising (Tu and Ginsburg 2006).

Growth in use of technology, combined with current payment incentives, has led to a substantial increase in the quantity and mix of services provided (Maxwell et al. 2007). Medicare's use of a sustainable growth rate has reinforced payment incentives favoring procedures. It has also limited growth in reimbursements for evaluation and management services (MedPAC 2007a, 2008b). Financial pressures from declining incomes have further reinforced these incentives. Studies of a randomly selected group of 12 markets nationwide in 2002-2003 indicate that physicians responded to declining income by increasing volume and revenue-producing services, both within and outside of their practices (Pham et al. 2004; Pham and Ginsburg 2007).

Other misplaced incentives appear in the current payment system. After a review of Medicare payment policy, the Medicare Payment Advisory Commission (MedPAC March 2008b) concluded that current payments result in distorted incentives favoring overuse of some services and underuse of others. To ensure accurate prices, MedPAC recommended addressing overvalued and misvalued services, adequacy of practice expense values, and aspects of the conceptual basis of the relative value schedule (Hackbarth 2007).

Overlaying incentives on basic physician payment systems continues to reward productivity, or volume, over quality and cannot be expected to erase underlying flaws in payment policy.

Although P4P as recently implemented introduces supplemental incentives into fee-for-service payments, P4P covers a variety of potential arrangements (Christianson et al. 2007). Overlaying incentives on basic physician payment systems continues to reward productivity, or volume, over quality and cannot be expected to erase underlying flaws in payment policy. For example, incentive payments may encourage use of preventive care, but will do so weakly if this care is not covered by insurance or entails substantial cost sharing.

National surveys show little change since 1996-1997 in practice-level incentives for physicians in groups of two or more (Reschovsky and Hadley 2007). Such incentives involve payment beyond the underlying form of payment (for example, fee-for-service). Incentives can be structured positively, in the form of bonuses, or negatively in the form of withholding. In 2004-2005, 70 percent of physicians had some incentives tied to productivity; in contrast, 20 percent had incentives tied to quality, almost always in addition to those for productivity. Quality incentives were much more common in primary care than specialty care and in large group and institutional practices. Incentives were also three times as likely in practices receiving a substantial part—that is, 20 percent or more—of their revenue from capitation. They also were more likely in group/staff HMOs. These findings are consistent with other studies showing a relatively strong emphasis on fee-for-service payment. They also suggest that the penetration of P4P efforts to date has been relatively localized and on a small scale nationally.

Eroding Incentives for Primary Care. The income gap between primary and specialty physicians is widening—recent surveys show that median income has increased much more slowly for primary care physicians than for specialists. Furthermore, fewer doctors in training aspire to practice primary care (Bodenheimer et al. 2007). Generalists practicing family medicine, general internal medicine, and general pediatrics provide half of all ambulatory care visits, but the number of recent graduates in these areas is declining. In addition, future supply may not be adequate to meet the needs of an aging population (Colwill et al. 2008). These concerns led MedPAC to recommend efforts to promote primary care, including enhanced, budget-neutral payments for a subset of evaluation and management services that constitute primary care, a medical home pilot demonstration, and Medicare subsidies for teaching hospitals to promote primary care (MedPAC 2008a).

Limits of Existing Physician Performance Measures. The American Medical Association, Centers for Medicare & Medicaid Services, National Committee for Quality Assurance, National Quality Forum, and others have led the way in encouraging development of accepted measures of physician performance (NQF 2007; Physician Consortium for Performance Improvement 2008). Available measures have moved beyond prevention and primary care, but most still center on underuse of recommended services. There is a dearth of measures capturing overuse, efficiency, care coordination, and outcomes of care, though many are actively working on ways to overcome these gaps.

. . . existing measures focus on what individual physicians or practices do, rather than how effectively the system as a whole performs in meeting patient needs.

In addition, existing measures focus on what individual physicians or practices do, rather than how effectively the system as a whole performs in meeting patient needs (Consumer-Purchaser Disclosure Project 2008). Policymakers and practitioners agree that measures of care coordination are important and that performance needs to reflect ways in which patients transition across settings of care and over time (IOM 2006). However, effective ways of measuring these dimensions of performance remain under study, and concerns exist about how to handle accountability for outcomes that span multiple providers and types of care. There also are tensions over the statistical feasibility of attributing care to individual physicians and identifying levels of aggregation that best reflect accountability for outcomes.

Although economists focus on financial incentives . . . diverse forces influence physician behavior.

There's More to It Than Money. Although economists focus on financial incentives, research in other disciplines highlights the diverse forces that influence physician behavior. Physician practice involves decision making under uncertain conditions, in which patients, illnesses, and outcomes vary (Town et al. 2004). In recommending treatment, physicians take risk into account and aim for "regret avoidance." They may react differently to positive and negative incentives, as well as to the way in which a given incentive is structured. Professional norms influence physician performance. Behavior is also shaped by competitive forces operating implicitly or explicitly in a practice group, depending on its interdependence and the nature of ownership. The fact that physicians typically provide services for multiple payers, using a variety of arrangements, also limits their response to incentives. For example, a California P4P program failed to engage physicians in responding to incentives, in part because of the multiple, uncoordinated health plan interventions and communications that they faced daily (Teleki et al. 2006).

Lessons from Experience

First-Generation P4P Yields Marginal Effects. Recent efforts at P4P typically overlay performance incentives on an existing, basic form of payment to providers. Physicians may receive a bonus over and above their regular payment if they improve care on specified measures. They also may be rewarded for using certain tools, such as registries, that improve care. While P4P is considered an innovation, it is similar to the incentives used historically to reward physician practice, especially in HMOs (Reshovsky and Hadley 2007; Gold et al. 1995; Gold 1999; Christianson et al. 2007).

Few studies have included a rigorous evaluation of P4P, and most studies conducted to date focus on early efforts. In a review of published, peer-reviewed empirical studies of paying for quality in health care, Rosenthal and Frank (2006) found six that met minimal quality criteria. Five involved narrowly targeted measures centering on individual physicians. Only two studies found positive results, and these were not the studies with the strongest designs. A 2003 review of P4P found 37 separate incentive plans involving 31 payers, most related to physicians (Rosenthal et al. 2004). In a 2006 followup, most programs were still in place, with early adopters expanding the number of measures, pool of money available, and sophistication of measurement (Rosenthal et al. 2007). However, few programs had been evaluated; their support was sustained by belief rather than evidence. Authors concluded that existing P4P studies tend to have limitations, although improvements typically have occurred in at least one measure of quality (usually based on HEDIS measures).

Recently, a study of 79 physician groups in Massachusetts found that practices with a P4P incentive for a measure were more likely to have taken a specific quality improvement action to improve on that measure (Mehrotra et al. 2007). But the incentive and its association with improvement were modest; most physician group leaders said that incentives of 5 percent of revenue or more would be necessary to increase emphasis on quality improvement. Groups with salaried employees and larger groups were more likely to have taken these actions than groups with other payment arrangements and smaller groups. Massachusetts also reports physician group-level quality measures publicly, so the study findings likely reflect a combination of the modest financial incentive (average of 2.2 percent of revenue) and concern about public reaction.

. . . most physician group leaders said that incentives of 5 percent of revenue or more would be necessary to increase emphasis on quality improvement.

Design and Implementation Strategy Matter. The structure of an incentive system will influence the outcomes most likely to be achieved. System designers need to think through what performance goals they seek to realize and construct features consistent with these goals. The box summarizes lessons from key design and implementation issues and approaches that may facilitate or impede success.

Lessons from Experience with Physician P4P		
Lessons Learned	**Facilitators**	**Barriers**
Match terms of payment to desired outcomes.	Identify who P4P rewards in terms of performance by comparing (1) against peers, (2) against absolute performance targets, or (3) against prior performance (Trude et al. 2006). The first option rewards high performers, the second pays only for desired performance, and the third pays for improvements. Those rewarded will differ under each scenario, so think through application and match measurement to goals.	Rewarding improvements has conceptual merit but is used less than other approaches because improvements take time and data lag. Rewarding high achievers may give most money to those already performing well at the start, providing limited incentive for improvements (Rosenthal et al. 2005).
Use a broad and balanced set of measures.	Physicians are likely to give priority to performance improvements that are measured (Young et al. 2007c). Early adopters of P4P have broadened and diversified measures they use (Rosenthal 2007).* Selecting measures that provide the right incentives can avoid narrow efforts and promote broad quality improvement (Epstein et al. 2004). Mature incentive programs measure both quality and cost and recognize connections between the two to address clinical and purchaser concerns (Rosenthal et al. 2007).	There may be a limit to the number of measures—and areas for improvement—that can be accommodated (Town et al. 2004; Christianson et al. 2007).
Anticipate physician reaction and work for trust.	Using accepted performance standards that physicians see as important will increase support (Felt-Lisk et al. 2007). Physician support is important; measurement issues include risk adjustment, using measures that reflect sufficient physician volume and accountability (medical home), and acknowledging role of patient compliance in performance (Christianson et al. 2007).	Patients and physicians distrust incentives they think will lead to less care (Gallagher et al. 2001; Epstein et al. 2004).
Incentive size is important.	Programs that cover a large share of a practice are more likely to draw provider attention and be significant, and often involve large payers and coalition efforts (Rosenthal et al. 2004).	The small size of many current incentives is one reason for their limited effects (Rosenthal et al. 2005; Rosenthal et al. 2004; Felt-Lisk et al. 2007). Physicians think that P4P means "a little more money and a lot more work" (Bodenheimer et al. 2005).

Lessons from Experience with Physician P4P *(continued)*

Lessons Learned	Facilitators	Barriers
Information infrastructure will influence effectiveness.	To address constraints information infrastructure imposes on ability to generate P4P measures, some initiatives go beyond performance incentives. For example, CMS demonstrations and other P4P programs pair quality performance incentives with incentives for practices to use electronic medical records. In Bridges for Excellence, physician offices can receive a bonus of up to $50 per patient for systems like registries and following up with at-risk people (Epstein and Hammel 2004).	Pending widespread system improvements, limitations in information system infrastructure detract from the effectiveness of P4P. For example, they were a major barrier to achieving performance goals in the Rewarding Results demonstrations (Young et al. 2007c). In late 2007, only 9 percent of physicians in practice settings with 1-3 physicians had electronic medical records, and 51 percent of large groups did (DesRoches et al. 2008).
The feasibility of P4P varies across markets and practice settings.	Potential is greater where large groups and integrated delivery systems exist since they have more resources to support infrastructure for quality measurement and improvement (Mehrotra et al. 2007). Substantial variation exists across markets in physician practice; available information infrastructure; relative leverage of physicians, hospitals, and health plans; and willingness of providers to participate and employers to exert influence (Trude et al. 2006). Even within markets, perspectives on care management and quality improvement likely to differ across types of practices (Rittenhouse et al. 2004).	Providers' willingness to participate or employers' motivation to help improve health information technology varies across markets (Trude et al. 2006). Solo physicians or small groups may not have sufficient scale or patient volume to support valid measurement, except for preventive services and/or the most common chronic conditions (Bodenheimer et al. 2005; Rosenthal et al. 2006).
Physician engagement is critical.	Surveys of primary care physicians in Massachusetts and California (where P4P is most advanced) found many reacted positively to the concept of payments based on quality but lacked understanding of features affecting them (Young et al. 2007b). In a 2005 national survey of general internists, Casalino et al. (2007a) found strong support for P4P but concern about accuracy of measures and possible unintended effects if physicians avoid high-risk patients or fail to improve in important but unmeasured areas.	Providers' lack of engagement has been a major barrier to the success of P4P (Rosenthal et al. 2007).

*In California's Integrated Healthcare Association program, for example, member health plans pay physician groups based on a consolidated scorecard that includes clinical measures, patient ratings, and use of information technology. Measures for efficiency and care coordination recently have been added (Epstein et al. 2004).

Source: Authors' analysis of relevant studies and analysis reported in the literature.

Attention Required

Key areas for future attention include:

- Moving beyond P4P of individual services to reward physicians for influencing the totality of care
- Factoring in equity considerations
- Enhancing the role of primary care and care coordination
- Aligning incentives across providers
- Prioritizing incentives that promote "value" while recognizing the tensions associated with decisions about resource use

Some efforts in this direction are under way (see table on page 12) but more is needed. Moving forward will require addressing technical challenges, such as developing payment models that effectively align incentives across providers, and financial challenges, such as supporting interoperable electronic medical records. More fundamental challenges involve confronting complex and value-laden issues and trade-offs. How these differences are resolved will determine what incentives are embedded in the health system of the future.

. . . incentives should . . . encourage physicians to be concerned about performance on measures reflecting the total patient experience, including care they do not provide directly.

Moving Beyond Individual Services. Health care expenditures are highly concentrated. Chronic conditions and episodes of need drive a disproportionate share of spending and disease burden. To align with overall performance goals, physician performance incentives should account for the range of services patients receive from a variety of providers and encourage physicians to be concerned about performance on measures reflecting the total patient experience, including care they do not provide directly. The IOM's 2006 report on aligning incentives in Medicare recognized this need. Yet providing incentives of this scope is challenging and potentially controversial.

Moving from fee-for-service to more bundled forms of payment can shift incentives (Schoen et al. 2007; Ginsburg 2008). One such approach involves measures that account for episodes of care for particular conditions. Work is under way on how to attribute care to particular physicians and identify providers accountable for care in an episode (MedPAC 2006). Another approach, global payments that cross multiple providers as well as hospital and nonhospital settings, is more challenging to implement but aligns well with goals involving care coordination and efficiency (Shih et al. 2008).

The Medicare Physician Group Practice demonstration is one effort under way to create broader performance incentives for physicians. It began in 2005 and involves 10 large physician groups that continue to receive regular fee-for-service payments, as well as an annual performance payment based on aggregate Medicare spending for their patients (Kautter et al. 2007). The intent is to encourage coordination across hospital and physician services, invest in administrative structure to enhance efficiency, and reward physicians for improving health care processes and outcomes (see table on page 12).

Features of current practice deter physicians from thinking beyond individual services. HIPPA has many positive features but also limits ability to share clinical information across unaffiliated or loosely affiliated providers. This is particularly problematic for smaller practices facing

barriers to sharing information or supporting the costs of electronic medical records. The lack of standards for interoperability also limits physicians' ability to monitor care patients receive and curbs payers' ability to develop clinically relevant measures of performance.

Equity and Resource Allocation Considerations. Patients are not all the same—some are more healthy, medically literate, financially secure, or responsive to physician advice than others. Differences often correlate with socioeconomic variables and make treating disadvantaged patients more difficult. Although enhanced cultural competence can make physicians more effective in treating diverse patients, patient and nonmedical factors beyond their control remain important to health outcomes.

The payment system needs to recognize how patients differ in ways that influence key outcomes.

These considerations warrant attention if performance measures are expected to provide incentives consistent with societal perspectives on improving health care (Casalino et al. 2007b). The payment system needs to recognize how patients differ in ways that influence key outcomes. In current physician service-oriented P4P programs, most performance measures relate to process of care and are not "risk-adjusted," as is common for outcome measures. For example, physicians should be able to encourage all their patients to receive timely preventive services, but payments typically do not factor in differences in the effort a physician might need to exert on patients with the same condition, but considerably different circumstances, to affect outcomes.

Determining how to respond to these concerns creates challenges in designing payment and incentive systems, not the least of which is how to identify patients or physicians that may incur higher costs due to these factors. Existing administrative data often do not support such adjustments. Future testing of adjustments and research on the role socioeconomic factors play in care practices and medical outcomes also warrant consideration if equity is the goal.

Current payment incentives diminish the role of primary care, to the detriment of system performance.

Enhancing Primary Care and Care Coordination. Current payment incentives diminish the role of primary care, to the detriment of system performance. Adding new performance incentives without addressing this problem will limit success. MedPAC (2007a, 2008b) has recommended modifying the way in which Medicare sets and updates physician payment rates, but more is likely to be needed. Enhanced payment rates, such as those associated with medical home demonstrations, or provider recognition awards, such as those offered by NCQA for care for diabetes, back pain, or heart disease/stroke and used in the Bridges to Excellence program, are basic incentives that could reinforce the importance of primary care and physicians who coordinate care. Modifying the way graduate medical education is financed and shifting the current pattern of income differentials across specialties could also help encourage a workforce well-suited to enhancing physician performance.

Aligning Incentives Across Providers. Because so much health care involves physicians, hospitals, or both, better alignment of incentives across these providers could encourage the outcomes desired from a well-performing health system. Studies show that, even in integrated systems, where organizational and financial ties exist between physicians and hospitals, alignment may not occur because conflicting payment incentives, inconsistent policies, and other forces result in limited, competing, or few incentives to promote quality (Budetti et al. 2002). In a national survey, 39 percent of hospital quality improvement directors rated lack of physician interest or involvement as a major barrier to improving their hospitals' quality performance scores (Laschober 2006). Burns and Muller (2008) suggest that bundled payments, where hospitals

share financial gains from improved performance with physicians, may have potential. But better alignment of economic and clinical incentives may not be possible without changing the infrastructure of practice and the culture of medicine.

Promoting Value and Acknowledging Tensions. Current geographical variations in practice and spending show that more care is not necessarily better care; services may be underused, overused, or misused. A key policy goal must involve creating performance and payment incentives that encourage the "right" or most appropriate care and minimize or eliminate unsafe or unnecessary care. Providers should be encouraged to think carefully about using care for which appropriateness is uncertain or unclear.

Focusing on value versus volume of care received highlights the importance of the outcomes sought from health care spending.

In response to these concerns, efforts have been made to restructure the debate on performance from one involving trade-offs among cost, access, and quality to one aimed at improving the value of performance in the health system. Focusing on value versus volume of care highlights the importance of the outcomes sought from health care spending. Concern for value provides an impetus for enhanced research on effective treatment and the cost effectiveness of alternative strategies. These studies are important because technology growth has increased health care spending (Ginsburg 2008).

Operational constraints in the health care system impose barriers and technical challenges to using payment system change to spur providers to act. For example, as CMS (2008) considers how to transition Medicare physician payment to focus more on value, it is asking for feedback on how to accommodate different practice arrangements, levels of accountability, and contributions of health care system members in a performance-based payment system. It is also seeking feedback on how to get the data needed for this change without undue burden or cost.

Finally, and perhaps more fundamentally, it is debatable whether a focus on value alone will resolve tensions over resources and priorities for health care spending. Effectiveness research may help to better target resources, but medical practice is likely to continue to involve judgment about how best to apply research on groups of patients to individuals, each with his or her unique needs and characteristics. While some treatments have the potential to generate more returns than others, many have some value, at least marginally, in improving care for individual patients. These circumstances make it challenging to determine how scarce resources should be allocated, what insurance should cover, and how ability to pay should influence access to care. In the face of diversity in values, it is appealing to let the market decide, but it is unclear whether this path will provide an equitable outcome.

Selected Work by Key Organizations	
Initiative	**Key Features**
CMS Value-Based Purchasing Demonstrations Related to Physician Services	*Medicare Care Management Performance (MCMP) Demonstration* (July 2007–June 2010). P4P to nearly 700 enrolled small to medium-sized physician practices in AR, CA, MA, UT. Annual per-patient bonus based on performance on 26 clinical quality measures pertaining to preventive services, diabetes, heart failure, and coronary artery disease, plus bonus for electronic submission of data. (Mathematica is the evaluator.) *Electronic Health Records Demonstration* (June 2009–May 2015). P4P and pay for use of EHR functions within a CCHIT-certified EHR, for small to medium-sized physician practices. Randomized design with up to 1,200 treatment and 1,200 control practices across 12 sites. Includes progressive incentives over time, moving from pay-for-reporting to P4P. System use incentive is based on responses to detailed survey; P4P is based on performance on the same 26 clinical quality measures and conditions as the MCMP demonstration. (Mathematica is the evaluator.) *Physician Group Practice (PGP) Demonstration* (April 2005–March 2009). Financial incentives in the form of shared savings for improving quality while achieving savings to 10 large multi-specialty groups with strong information infrastructure. By the end of the second year, groups improved quality scores on diabetes measures by an average of 9 percentage points, 11 percentage points for heart failure, and 5 percentage points for coronary artery disease, with 19 of 27 clinical measures improving. Four also achieved savings, receiving a total of $13.8 million in performance payments. *Medicare Health Quality Demonstration* (five years in length, not yet started). Next generation of the PGP demonstration. Will evaluate effect of factors such as appropriate use of culturally and ethnically sensitive health care delivery on quality. Defines "health care groups" as regional coalitions, integrated delivery systems, and physician groups; allows groups to incorporate approved alternative payment systems and modifications to Medicare FFS and Medicare Advantage benefit packages. For more, see www.cms.hhs.gov/DemoProjectsEvalRpts/MD/list.asp
CMS Gainsharing Demonstration	Determining if aligning incentives by allowing physicians to share in savings associated with inpatient stay and period following discharge can improve quality and efficiency. Three-year project began January 2007 with six hospitals.
CMS Work on Resource Use Reports	CMS Physician and Hospital Resources Use (PHRU) Workgroup is working to support CMS goal of enhancing efficiency through value-based purchasing. Part of this effort involves using Medicare FFS claims and commercial episode grouper products to create resource use reports for individual physicians treating patients with eight high prevalence, high cost conditions. Reports being pilot tested with the goal of considering using a scaled-up version nationally. (Mathematica is the contractor.)
MedPAC Recommendations for Payment Reform and Medical Home	Payment adjustment on the Medicare physician fee schedule for primary care services. Much larger medical home pilot in Medicare (quadruple the size of the current effort); participants would receive P4P incentives; must include use of health information technology for active clinical decision support, 24-hour patient communication, and rapid access. Pilot test of feasibility of bundled payment for services around hospital episodes for selected conditions, incorporating accountability for quality.

Selected Work by Key Organizations *(continued)*

Initiative	Key Features
NQF Frameworks	By developing a definition of coordinated care, NQF hoped to help facilitate measure development. The five domains are (1) health care "home" that functions as central point for coordinating care around patient's needs and preferences; (2) proactive plan of care and followup, including goal-setting with patients and joint management of plan of care; (3) communication with all team members, including patients and family; (4) information systems, using standardized, integrated electronic information systems with functionalities essential to care coordination; and (5) transitions or hand-offs between settings of care; ensuring these are coordinated and safe. Will soon release measurement framework for assessing "value" associated with episodes of care for chronic conditions, with funding from the Robert Wood Johnson Foundation and Commonwealth Fund. Working to apply framework to develop more comprehensive measures for diabetes care.
Medical Home Principles, Recognition, Pilots/Demonstrations	Joint principles for a medical home issued in 2007 by the American Academy of Family Physicians, American College of Physicians, American Academy of Pediatrics, and American Osteopathic Association. NCQA operates a patient-centered medical home recognition program built on these principles. CMS demonstration in all or parts of eight states will provide new reimbursement in the form of a care management fee (about $40 or $50 per beneficiary per month, risk adjusted) for services of a "personal physician." "Typical" and "enhanced" medical homes are defined and qualify based on the Physician Practice Connections/Patient-Centered Medical Home instrument. Payment period is January 2010 through December 2012. In the private sector, 32 BCBS companies committed to medical home demonstrations in 2008; pilots sponsored by United Healthgroup, and jointly by Group Health and Health Insurance Plan of New York, also exist. The latter includes randomized design and evaluation. Many state Medicaid agencies pay a primary care case management fee to a beneficiary's chosen primary care provider; some efforts have evolved to encompass more functions desired from a medical home.
State Reforms—Minnesota	Legislation calls for a single statewide system of quality-based incentive payments by July 1, 2009, for public and private payers, to include payments for health care (medical) homes. Legislation requires defining at least seven "baskets" of health care by mid-2009 (cutting across providers) for certain conditions (such as all services needed for knee surgery). Standardized quality measures are to be established; beginning January 2010, providers offering baskets will establish their own prices. Consumers would have ability to compare cost and quality. Bundled payment and transparent quality approach are expected to promote provider innovation around quality.

Source: Compilation by Suzanne Felt-Lisk, 2008.

References

Bodenheimer, Thomas, Robert A. Berenson, and Paul Rudolph. "The Primary Care-Specialty Income Gap: Why It Matters." *Annals of Internal Medicine*, vol. 146, no. 4, February 20, 2007, pp. 301-307.

Bodenheimer, Thomas, J. J. May, and Robert A. Berenson. "Can Money Buy Quality? Physician Response to Pay for Performance." Issue Brief 105, Washington, DC: Center for Studying Health System Change, December 2005.

Budetti, Peter P., Stephen M. Shortell, Teresa M. Waters, Jeffrey A. Alexander, and others. "Physician and Health System Integration." *Health Affairs*, vol. 21, no. 1, January/February 2002, pp. 203-210.

Burns, Lawton Robert, and Ralph W. Muller. "Hospital-Physician Collaboration: Landscape of Economic Integration and Impact on Clinical Integration." *Milbank Quarterly*, vol. 86, no. 3, 2008, pp. 375-434.

Casalino, Lawrence P., G. Caleb Alexander, Lei Jiml, and R. Tamara Knoetza, "General Internists' Views on Pay-For-Performance and Public Reporting of Quality Scores: A National Survey." *Health Affairs*, vol. 26, no. 2, March/April 2007a, pp. 492-499a.

Casalino, Lawrence P., Arthur Elster, Andy Eisenberg, Evelyn Lewis, John Montgomery, and Diana Ramos. "Will Pay for Performance and Quality Reporting Affect Health Care Disparities?" *Health Affairs* Web Exclusive, April 10, 2007b.

Centers for Medicare & Medicaid Services. "Development of a Plan to Transition to a Medicare Value-Based Purchasing Program for Physicians and Other Professional Services—Issues Paper for Public Listening Session, December 9, 2008." www.cms.hhs.gov/center/physician.asp. Accessed November 26, 2008.

Christianson, Jon B., Sheila Leatherman, and Kim Sutherland. "Paying for Quality: Understanding and Assessing Physician Pay-for-Performance Initiatives." Research Synthesis No. 13. Princeton, New Jersey: Robert Wood Johnson Foundation, December 2007.

Colwill, Jack M., James M. Cultice, and Robin L. Kruse. "Will Generalist Physician Supply Meet Demands of an Increasing and Aging Population?" *Health Affairs* Web Exclusive, April 29, 2008.

Commonwealth Fund Commission on a High Performing Health System. "A High Performing Health System for the United States: An Ambitious Agenda for the Next President." New York: The Commonwealth Fund, November 2007.

Consumer-Purchaser Disclosure Project. "Patient Charter for Physician Performance Measurement, Reporting, and Tiering Programs: Ensuring Transparency, Fairness and Independent Review." Washington, DC: National Partnership for Women and Families, April 1, 2008.

CTSonline. http://ctsonline.s-3.com/psurvey.asp. Accessed November 16, 2008.

Davis, Karen, Cathy Schoen, Stephen C. Schoenbaum, Michelle M. Doty, Alyssa L. Holmgren, Jennifer L. Kriss, and Katherine K. Shea. "Mirror, Mirror on the Wall: An International Update on the Comparative Performance of American Health Care." New York: The Commonwealth Fund, May 16, 2007.

DesRoches, Catherine M., et al. "Electronic Health Records in Ambulatory Care—A National Survey of Physicians." *New England Journal of Medicine*, vol. 359, no. 1, July 3, 2008, pp. 50-60.

Epstein, Arnold, T. H. Lee, and M. B. Hamel. "Sounding Board: Paying Physicians for High Quality Care." *New England Journal of Medicine*, vol. 350, 2004, pp. 406-410.

Felt-Lisk, Suzanne, Gilbert Gimm, and Stephanie Peterson. "Making Pay for Performance Work in Medicaid." *Health Affairs* Web Exclusive, vol. 26, no. 4, June 26, 2007, pp. w516-w517.

Fisher, Elliot et al. "The Implications of Regional Variations in Medicine Spending, Part 2: Health Outcomes and Satisfaction with Care." *Annals of Internal Medicine*, vol. 138, no. 4, 2003, pp. 288-298.

Gallagher, Thomas H., Robert F. St. Peter, Margaret Chesney, and Bernard Low. "Patient Attitudes Toward Cost Control Bonuses for Managed Care Physicians." *Health Affairs*, vol. 20, no. 2, March/April 2001, pp. 186-192.

Ginsburg, Paul B. "High and Rising Health Care Costs: Demystifying U.S. Health Care Spending." Princeton, NJ: Robert Wood Johnson Foundation Synthesis Project, Report No. 16, October 2008.

Ginsburg, Paul B. "Provider-Payment Incentives and Delivery System Reform" in *The Health Care Delivery System: A Blueprint for Reform*. Washington DC: Center for American Progress and the Institute on Medicine as a Profession, 2008.

Gold, Marsha. "Financial Incentives: Current Realities and Challenges for Physicians." *Journal of General Internal Medicine*, vol. 14, supplement, January 1999, pp. S6-S12.

Gold, Marsha. "Geographical Variation in Medicare Per Capita Spending: Should Policymakers Be Concerned?" Princeton, NJ: Robert Wood Johnson Foundation Synthesis Project, Report No. 6, July 2004.

Gold, Marsha, Robert Hurley, Tim Lake, Todd Ensor, and Robert A. Berenson. "A National Survey of the Arrangements Managed Care Plans Make with Physicians." *New England Journal of Medicine*, vol. 333, 1995, pp. 1678-1683.

Gold, Marsha, Timothy Lake, Robert Hurley, and Michael Sinclair. "Financial Risk Sharing with Providers in Health Maintenance Organizations, 1999." *Inquiry*, vol. 39, spring 2002, pp. 34-44.

Hackbarth, Glenn. "Options to Improve Medicare's Payments to Physicians." Testimony by the Medicare Payment Advisory Commission to the Subcommittee on Health, House Ways and Means Committee, May 10, 2007.

Institute of Medicine. "Crossing the Quality Chasm: A New Health System for the 21st Century." Washington, DC: National Academy of Sciences, 2001.

Institute of Medicine. "Rewarding Provider Performance: Aligning Incentives in Medicare." Washington, DC: National Academies Press, 2006.

Kautter, John, Gregory C. Pope, Michael Trisolini, and Sherry Ground. "Medicare Physician Group Practice Demonstration Design: Quality and Efficiency Pay for Performance." *Health Care Financing Review*, vol. 29, no. 1, fall 2007, pp. 15-29.

Keehan, S. et al. and the National Health Expenditure Accounts Projections Team. "Health Spending Projections Through 2017: The Baby Boom Generation is Coming to Medicare." *Health Affairs* Web Exclusive, February 26, 2008, pp. w145-w155.

Laschober, Mary. "Potential Challenges in Public Reporting for Hospitals." Trends in Health Care Quality Issue Brief Number 2. Washington, DC: Mathematica Policy Research, Inc., March 2006.

Liebhaber, Alison, and Joy M. Grossman. "Physicians Moving to Mid-Sized Single-Specialty Practices." Tracking Report #18 Results from the Community Tracking Study. Washington, DC: Center for Studying Health System Change, August 2007.

Maxwell, Stephanie, Stephen Zuckerman, and Robert A. Berenson. "Use of Physicians' Services Under Medicare's Resource-Based Payments." *New England Journal of Medicine*, vol. 356, no. 19, May 3, 2007, pp. 1853-1861.

McGlynn, Elizabeth A. "Identifying, Categorizing, and Evaluating Health Care Efficiency Measures." AHRQ Publication No. 08-0030. Rockville, MD: Agency for Healthcare Research and Quality, April 2008.

McGlynn, Elizabeth et al. "The Quality of Health Care Delivered to Adults in the United States." *New England Journal of Medicine*, vol. 248, no. 6, 2003, pp. 2635-2645.

Medicare Payment Advisory Commission. "Assessing Alternatives to the Sustainable Growth Rate System." Washington, DC, March 2007a.

Medicare Payment Advisory Commission. "Physician Services Payment System: Payment Basics." Washington, DC, Revised October 2007b.

Medicare Payment Advisory Commission. "Report to Congress: Increasing the Value of Medicare." Washington, DC, June 2006.

Medicare Payment Advisory Commission. "Section 2A: Promoting the Use of Primary Care," in *Report to Congress: Reforming the Delivery System*. Washington, DC, June 2008a.

Medicare Payment Advisory Commission. "Section 2B: Physician Services," in *Report to Congress: Medicare Payment Policy*. Washington, DC, March 2008b, pp. 77-105.

Mehrotra, Ateev, Steven D. Pearson, Kathryn L. Coltin, Ken P. Kleinman, Janice A. Singer, Barbra Rabson, and Eric Schneider. "The Response of Physician Groups to P4P Incentives." *American Journal of Managed Care*, vol. 13, no. 5, May 2007, pp. 249-255.

National Priorities Partnership. *National Priorities and Goals: Aligning Our Efforts to Transform America's Healthcare*. Washington, DC: National Quality Forum, 2008.

National Quality Forum. "National Voluntary Consensus Standards for Ambulatory Care." Washington, DC, December 2007.

Newhouse, Joseph P. "Medicare's Challenges in Paying Providers." *Health Care Financing Review*, vol. 27, no. 2, winter 2005-2006, pp. 35-44.

Pham, Hoangmai H., Kelly J. Devers, Jessica H. May, and Robert Berenson. "Financial Pressures Spur Physician Entrepreneurialism." *Health Affairs*, vol. 23, no. 2, March-April 2004, pp. 70-81.

Pham, Hoangmai H., and Paul Ginsburg. "Unhealthy Trends: The Future of Physician Services." *Health Affairs*, vol. 26, no. 6, November-December 2007, pp. 1586-1598.

Physician Consortium for Performance Improvement (PCPI). "Performance Measure Status Report." Updated September 23, 2008. Chicago, IL: American Medical Association. www.ama-assn.org/ama/pub/category/4837.html. Accessed October 30, 2008.

Reshovsky, James, and Jack Hadley. "Physician Financial Incentives: Use of Quality Incentives Inches Up, but Productivity Still Dominates." HSC Issue Brief #108. Washington, DC: Center for Studying Health System Change, January 2007.

Rittenhouse, Diane R., Kevin Grumbach, Edward H. O'Neil, Catherine Dower, and Andrew Bindman. "Physician Organization and Care Management in California: From Cottage to Kaiser." *Health Affairs*, vol. 23, no. 6, November/December 2004, pp. 51-62.

Rosenthal, Meredith, R. Fernandoulle, and H. R. Song. "Paying for Quality: Providers' Incentives for Quality Improvement." *Health Affairs*, vol. 23, 2004, pp. 127-141.

Rosenthal, Meredith B., and Richard G. Frank. "What Is the Empirical Basis for Paying for Quality in Health Care?" *Medical Care Research and Review*, vol. 63, no. 2, April 2006, pp. 235-157.

Rosenthal, Meredith B., Richard G. Frank, Joan L. Buchanan, and Arnold M. Epstein. "Transmission of Financial Incentives to Physicians by Intermediary Organizations in California." *Health Affairs*, vol. 21, no. 4, July/August 2002, pp. 197-205.

Rosenthal, Meredith B., Richard G. Frank, and Arnold M. Epstein. "Early Experience with Pay for Performance: From Concept to Practice." *Journal of the American Medical Association*, vol. 294, 2005, pp. 1788-1793.

Rosenthal, Meredith, Bruce E. Landon, Katherine Howitt, HyanSook Ryu Song, and Arnold M. Epstein. "Climbing Up the Pay-for-Performance Learning Curve: Where Are the Early Adopters Now?" *Health Affairs*, vol. 26, no. 6, November/December 2007, pp. 1674-1682.

Rosenthal, Meredith, Bruce Landon, S. Norman, and others. "Pay for Performance in Commercial HMOs." *New England Journal of Medicine*, vol. 355, no. 18, November 2, 2006, pp. 1895-1902.

Schoen, Cathy, Stuart Guterman, Anthony Shih, Jennifer Lau, Sophie Kasimow, Anne Gauthier, and Karen Davis. "Bending the Curve: Options for Achieving Savings and Improving Value in U.S. Spending." New York: The Commonwealth Fund, December 2007.

Shih, Anthony, Karen Davis, Stephen C. Schoenbaum, Anne Gauthier, Rachel Nuzum, and Douglas McCarthy. "Organizing the U.S. Health Care Delivery System." New York: The Commonwealth Fund, August 2008.

Teleki, Stephanie S., Cheryl L. Damberg, Chau Pham, and Sandra H. Berry. "Will Financial Incentives Stimulate Quality Improvement? Reactions from Frontline Physicians." *American Journal of Medical Quality*, vol. 21, no. 6, November/December 2006, pp. 367-374.

Tollen, Laura. "Physician Organization in Relation to Quality and Efficiency of Care: A Synthesis of Recent Literature." New York: The Commonwealth Fund, April 2008.

Town, Robert, Douglas R. Wholey, John Kralewski, and Bryan Dowd. "Assessing the Influence of Incentives on Physicians and Medical Groups." *Medical Care Research and Review*, vol. 61, no. 3, supplement, September 2004, pp. 80S-118S.

Trude, Sally, Melanie Au, and Jon B. Christianson. "Health Plan Pay for Performance Strategies." *American Journal of Managed Care*, vol. 12, 2006, pp. 537-542.

Tu, Ha T., and Paul B. Ginsburg. "Losing Ground: Physician Income 1995-2003." Tracking Report No. 15, Washington, DC: Center for Studying Health System Change, June 2006.

U.S. Government Accountability Office. "Care Coordination Programs Used in Demonstration Show Promise, But Wider Use of Payment Approach May Be Limited." GAO 08-65, Washington, DC, February 2008.

Wennberg, J. E., and E. S. Fisher, editors. "The Care of Patients with Severe Chronic Illness: A Report on the Medicare Program by the Dartmouth Atlas Project." Hanover, New Hampshire: The Center for the Evaluative Clinical Sciences, Dartmouth Atlas Project, 2006.

Young, Gary J., James F. Burgess, and Bert White. "Pioneering Pay-for-Quality: Lessons from the Rewarding Results Demonstration." *Health Care Financing Review*, vol. 29, no. 1, fall 2007, pp. 59-70.

Young, Gary, M. Meterko, H. Beckman, et al. "Effects of Paying Physicians Based on Their Relative Performance for Quality." *Journal of General Internal Medicine*, vol. 229, June 2007a, pp. 872-876.

Young, Gary, M. Meterko, and B. White, et al. "Physician Attitudes Toward Pay for Quality Programs: Perspectives from the Front Line." *Medical Care Research and Review*, vol. 64, no. 3, June 2007b, pp. 331-343.

PRINCETON OFFICE
PO Box 2393
Princeton, NJ 08543-2393
(609) 799-3535
Fax: (609) 799-0005

WASHINGTON OFFICE
600 Maryland Avenue, SW, Suite 550
Washington, DC 20024-2512
(202) 484-9220
Fax: (202) 863-1763

CAMBRIDGE OFFICE
955 Massachusetts Avenue, Suite 801
Cambridge, MA 02139
(617) 491-7900
Fax: (617) 491-8044

ANN ARBOR OFFICE
555 South Forest Ave., Suite 3
Ann Arbor, MI 48104-2583
(734) 794-1120
Fax: (734) 794-0241

Mathematica strives to improve public well-being by bringing the highest standards of quality, objectivity, and excellence to bear on the provision of information collection and analysis to our clients.

Visit our Web site at
www.mathematica-mpr.com